Testoil-ISO 4113

WPP 001/4 MB 5,7 t

1. Edition

PES 6 A 90 D 410 RS2293

RQV 300-1425 AB982DL

supersedes

company:

Daimler-Benz

engine:

OM 352 A (172 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15-2,25 (2,10-2,30) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,1	7,7-7,8	0,3(0,45)			
300 1200/500	(+0,1) 7,8-8,0	0,9-1,5 C, 1-5	0,2(0,4) 0,4(0,55)	ľ		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate rated speed				Lower rated	speed		Sliding sleeve travel	
Degree of deflection		Control rod travel	(b)	Degree of deflection		Control rod travel		Degree of deflection		Control rod travel		1
of control lever	rod travel	rev/min	(2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6)	7	8	9	10	11
ca.66	1425 1675	16,0-19 0 - 1	,3	-	-	-		ca.10	100 300	min.7,5 5,9-6,1		0,6-1,4
ca.61	10,1	1440-14								630= 2,0	1000	5,0-5,4
	4,0	1555 - 15	85						800 370-	0 - 1 440	1450	8,3
								(3a)	370	TTU		

Torque control trave! a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel deli- high idle s	very characteristics 5a	Starting fuel delivery 6 Idle switching point		Torque- travel	control 5
rev/min	cm³/1000 strakes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 1400	0,4 bar 77,0-78,0 (75,0-80,0)	1440-1450*	LDA 500	0,25 bar 70,0-73,0 (68,0-75,0)	100	13,7-14,3 mm RW		
1200	79,0-82,0 (77,0-84,0)		LDA 1400	0 bar 62,0-64,0 (60.0-66.0)	300 100- (80-	10,0-16,0 220 240)		./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.77

D. Adjustment Test for Manifold Pressure Compensator

MB 5,7 t

-2-

Test at n =

1400

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
2293 with 982DL	0	0,16 0,22	9,3 - 9,4 9,6 -10,0 11,0 -11,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Testoil-ISO 411

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 16,0 b

2. Edition

engine:

PE 10 A 90 D 520/5 LS2362

ROV 1150 AB882R RQV 750 AB966R ROV 250-1250 AB967R ./. supersedes 1.75 company: MAN

D 2530

10 - 9 - 4 - 1 - 8 - 7 - 6 - 3 - 5 - 2 0 - 45- 72-117-144-189-216-261-288-333°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Suel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1000	9	5,7 - 6,2	0,4			
	6	2,2 - 3,2		اليادار بالمالي البساما		
200	9	3,5 - 4,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV 1150 AB882R

deflection of control	rev/min Control rod travel	mm	(a)	Intermediate rated speed Degree of deflection of control lever Lower rated speed Control rod deflection of control lever Lower rated speed Control rod deflection of control lever Rev/min mm (4)				travel	Sliding s	eeve travel	
1	2	3		4	5	6	7	8	9	10	11
ca.56	1150 1175	11,3-14 6,0-11			•	-	-	-	-	1150	4,7
	1200 1250	0 -7,								-	-
	1230	U									
, .							<u>3a</u>				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a posed 5b	Starting fuel delivery 6 Idle switching point		Torque- travel	control (5)
rev/min	cfh³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
ca.10	mm RW	1160-1170*			100	min.20mmRW		

Checking values in brackets

B. Governor Settings

RQV 750 AB966R

Upper rated	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sleeve travel	
Degree of deflection of control lever	Control rodtravel	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.29	725 750	16,0-22 9,8-13		-	-	-	-	-	-	750	4,6
	770 800	2,5-11 0							•	-	•
							(3a)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	stop	Rotational-speed limitation intermediate speed	\smile	Fuel deliv high idle s	ery characteristics 5a peed 5b	Starting Idle switchir	\sim	Torque- travel	Control cod
rev/min	cm ³ /1000 strokes	rev/min	(4a)	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ² /1000 strokes 7	rev/min 8	travel mm 9
725	110,5 - 111,5	745-755 *	*						·

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

RQV 250-1250 AB967R

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Slidina sl	eeve travel
Degree of deflection of control	rev/min Control rod travel	Control rod travel	Degree of deflection of control	ĺ		Degree of deflection of control		Control rod travel		1
lever	mm	rev/min (2a)	lever	rev/min	mm (4)	lever	rev/min		rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1275 1320	14,3-17,3 11,8-14,5		-	-	ca.13	100 200	7,2-10,5 5,5-8,6	1275	8,4
	1370 1410	4,3-10,9 0-7,8					350 410	0-3,2 0	-	-
l	1500	0	1				1			
						<u>3</u>		·		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		intermediate speed	Fuel deliv high idle s	rery characteristics 5a speed 5b		fuel delivery 6	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1250	83,0 - 84,0	1290-1300 *						
						'		

Checking values in brackets

Festoil-ISO

WPP 001/4 MB 5,7 s

5. Edition

PES 6 A 90 D 410 RS2293

RQV 300-1425 AB946L, ..947L,948L,949L

company:

8.77 Daimler-Benz

S2293Z with 946L s.a. MB 5,7 s3

engine: 124kW(168 PS) OM 352 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	2,15-2,25 (2,10-2,30)	mm (from BDC)	mm (from BDC)								
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6						
1375	10,8	7,4 - 7,5	0,3(0,45									
300 500	+0,1 7,8-8,0 	0,9 - 1,5 C, 4-5	0,2(0,4)	ł								

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

..946 L

Upper rated :	speed			Intermediate	rated sp	eed	Lower rated	speed		Slidina e	leeve travel
Degree of deflection of control lever 1	rod travel	Control rod travel mm rev/min 3	(a) (2a)	Degree of deflection of control lever 4	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mrn 11
ca.66	1425 1800	16,0-19 0 - 1	•	•	•	-	ca.10	100 300 570-	min.7,3 5,7-5,9 630= 2,0		1,4 - 2,2 8,2
ca.61	9,8 4,0 1700	1435-14 1535-15 0 - 1					(3a)	750	0 - 1	-	

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 20 limitation intermediate speed	high idle speed (5)		Starting Idle switchir	fuel delivery 6	Torque- travei	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7 mmRW	8	9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445*	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100	13,7-14,3		
			:		100-2	220 (80-240)		·

Checking values in brackets

Testoil-ISO 4113

Upper rated s	speed		intermediate	rated spe	ed	Lower rated	speed			Stiding st	eeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control ro travel mm	d (3)	rev/min	mm
1	2	3	4	5	6	7	8	9		10	11
ca.68	1425 1800 9,8	16,0-19,0 0 - 1 1435-1445	-	-	-	ca.10	100 300 570- 750	min.7 5,7-5 630= 2 0 -	,9	300 800 1420	0,6-1,2 4,0-4,5 8,2
	4,0 1650	1530-1560 0 - 1				За			•	-	

Torque control travel a =

B. Governor Settings

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv character high idle s	ristics	Starting Idle switchir	fuel delivery 6	Torque- travel	control 5
rev/min 1	cm ³ /1000 strokes 2	iev/min 4a)	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7 MM RW	rev/min 8	travei mm 9
LDA 1375	0,7 bar 74,0-75,0 (72,0-77,0)	1435-1445 947: 700 948: 700/ 0,4bar 949: 1300	LDA 500	0 bar 54,0-56,0 (52,0-58,0)	100	13,7-14,3 220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than co: 2

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

1375

decreasing pressure – in bar gauge pressure inorgange pressure

" XXXXXX		
Setting	Measurement	diminution Control rod travel- difference
Gauge pressure = bar	Gauge pressure = bar	mm
·0 , 68		10,8 - 10,9
	0,22 - 0,23	10,6 - 10,7
	0	10,4 - 10,5
		·
	Setting Gauge pressure = bar	Setting Gauge pressure = bar Gauge pressure = bar 0,68 0,22 - 0,23

En'

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5.7 v 2

4. Edition

PES 6 A 90 D 410 RS 2596

ROV 300-1400 AB 1066 DL

supersedes 10.80

Daimler-Benz company:

OM 352 A engine:

126 kW (171 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC) 2,00-2,10

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4 ^{+0,1}	7,8 - 7,9	0,3(0,45)		- 2 04 W	
300	8,9-9,1	0,9 - 1,5	0,2(0,4)			
500	13,6+0,1	C, col.4-5	0,4(0,55)			
500	12,3+0,1					
			<u> </u>	<u> </u>		<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed	•	Slidina s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 28	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	1 mm
Max.	1400 1750	15,2-17,8 0 - 1	-		- .	ca.19	100 300	min.10,5 8,9-9,1	300 500 1450	1,2 2,5-2,7 8,6
ca.62	11,4 4,0	1440-1450 1580-1610				400-470 3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel delivery characteristics (5a) high idle speed (5b)		Starting fuel delivery 6 Idle switching point		Torque- travel	Control rod
rev/min cm³/1000 strokes .		rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min cm³/1000 strokes 6 7		rev/min 8	travel mm +0,1
LDA 1400	0,7 bar 78,0-79,0 (76,0-81,0)	1440-1450*	LDA 500 LDA 500	0,7 bar 72,5-74,5 (70,5-76,5) 0 bar 58,0-60,0 (56,0-62,0)	100	72,25-82,25 15,8 - 16,2 RW 220(80-240)	1400 1200 1000 500	12,5 13,1

Checking values in brackets

B. Governor Settings

Upper rated s	peed	1		Intermediate	rat3d spe	ed	Lower rated	speed	t .	Sliding	leeve travel
deflection		Control rod travel	(la)	Degree of deflection of control		travel	Degree of deflection of control		Control rod travel	Silong s	1
	mm	rev/min	(2a)	lever	rev/min		lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
			į								
							За				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv characte high idle s	ristics	Idle	fuel delivery 6	Torque- travel	control 5
rev/min	cm ⁹ /1000 strokes	rev/min (4a)	rev/min	cm³/1000 strokes	.rev/min	cm³/1000 strokes	rev/min	travel mm
 	2	3	4	5	6	7	88	9

Checking values in brackets

* 1 mm less control roe travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure ≈ bar	Gauge pressure = bar	
2596 with 1066 -1 DL	.0,7	0,35	13,6 - 13,7 13,2 - 13,3
		0,2	12,5 - 12,7 12,3 - 12,4

En

and Governors

WPP 001/4 MB 8,7 1

1. Edition

PE6A90D410RS2124

RQ 450/1250 AB 812

supersedes

company:

Daimler-Benz

OM 360 engine

141 kW(192 PS)

1 - 5 - 3 - 6 - 2 - 4 0 - 60 - 120 - 180 - 240 - 300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(2,10-2,30)
Port closing at prestroke
2,15-2,25
m

Festoil-ISO 4113

mm (from BDC) RW 10,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1250	10,2	8,6 - 8,7	0,3(0,45)			
450	+0,1 5,9-6,1					
800		C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of sticker ick	Full-lead s Setting po					ed regula Coint		cifications (5)	Torque control		
rev/min 1	Control rod travel mm 2	rev/min 3		Control red travel rnrn 5	rev/min 6	fæv/min 7	Control rod travel		Control rod	rev/min	travel	
700	15,6-16,4	700	16,0	· ·	1295-1310 1345-1375	450	6,0	100 450 600 500-	min.7,5 5,9-6,1 0 -1,0 540 2,0	·		

Torque-control travel

Speed regulation: At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	3 b	Starting f	uel delivery d l Control
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	control root travel cm ³ /1000 strokes:/ mm
1250	86,0-87,0 (84,0-89,0)	800	800	83,5-86,5 (81,5-88,5)			

Checking values in brackets

11.80

BOSCH

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 MAN 12,8 d 3. Edition

En

50 4113

PE 8 A 90 D 320 LS2514

RQV 250-1250 AB993DR

250-1250 AB852DR

supersedes 5.78

company: M A N

D 2538 M/MF 190 kW (256 PS)

8 - 7 - 2 - 6 - 3 - 5 - 4 - 1 +0,500 - 45 - 90 - 135 - 180 - 225 - 270 - 315°(+0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,45-1,65) mm (from BDC)

eoc) Cy1.8

Rotational speed ###################################	Control rod travei fnm 2	Fuel delivery with 933DR cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery With 852DR cm ³ /100 strokes 3	Sprik's pre-tensioning (torque-control valve) mm 6
1250	11,5	10,1 - 10,3	0,3(0,45)	11,5	10, 1 - 10, 3	
,	+0,5			+0,1		
250	7,4-7,6	0,9 - 1,5	0,2(0,4)	7,4-7,6	0,9 - 1,5	
800/500		C, 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

993DR

Upper rated s	pend		Intermediate	rated spa	ed	Lower rated	speed	•	Sliding s	leeve travel
	rev/min Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		. ①
of control lever	rod travel mm	mm rev/min (28)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.50	1275 1500	14,4-17,4 0 - 1	•	~	-	ca.11	100 250	min.7,5 5,9-6,1 370 = 2,0	700	0,5-1,2 4,4-4,8 8,3
ca.48		1290-1300 1360-1390				<u>3a</u>	450	0 - 1	1200	0,3

Torque control travel a =

mit

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	stop		Fuel deliv	very characteristics 56 peed 56	Starting Idle switchin)	Torque-control (travel Control r	
rev/min 1	cm³/1000 strokes .	rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ⁹ /1000 strokes 7	rev/min 8	travel mm g+ 0,1
1250	102, 5-123, 5 (100, 5-105, 5	1290-1300*	800 500	95,5- 98,5 (93,5-100,5) max. 94,0	1	134,25-144,25 7,0 mm RW	1250 900 500	11,5 11,0 11,2
					100-	-170 (80-190)		./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschäftsbereich KH. Kundendienst, Kfz-Ausrüstung. C by Robert Bosch GmbH, D-7 Stuttgert 1, Postfech 50. Printed in the Federal Republic of Germany. Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		C::4:	
deflection	rev/min Control rodtravel mm	travel mm		Degree of deflection of control lever		Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	leeve travel
1	2	3		4	5	6	7	8	9	10	11
ca.50	1275 1500	14,4-17 0 - 1	,4	1	•	-	ca.13		min.7,2 5,6-5,8 70=2,0 0-1	200 700 1200	0,5-1,2 4,4-4,8 8,3
ca.44		1290-1300 1350-1380					3 a)	100	0 · 1		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil tem	stop	Rotational-speed (2b) Ilmitation Intermediate speed	Fuel deliv high idle	very characteristics (5a) speed (5b)	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes 2	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min 8	travel mm
1250	101, 5-102, 5 (99, 5-104, 5)		500	78,0 - 86,0 (76,0 - 88,0)	250	18,0-18,6 7,0 170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed		Slidings	leeve travel
Degree of deflection of control lever	Control rod travel	ľ	(1a)	Degree of deflection of control		travel	Degree of deflection of control		Control rod travel		0
1		rev/min 3	(2a)	lever 4		mm (4) 6	lever 7	rev/min 8	mm (3)	rev/min 10	mm 11
									•		
							(3a)			·	

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil tem		Internediate speed	Fuel deliv	very characteristics 5a		fuel delivery 6 ng point	Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

A 14

WPP 001/4 2. Edition

supersedes

10.77

ROV 275-1200 AB 972 L 250-1300 AB 961 DL

company: engine:

OM Brescia CP3/100-136PS

CP3/130

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

PES 6 A 90 D 410 RS 2340

Port closing at prestroke

2,15-2,25 (2.10-2.30) mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery (1) cm³/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery (2) cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm min-1
1200	10,9	7,5 - 7,7	0,3(0,45)	10,3-10,4	7,4 - 7,6	-n 1300
27.5 1100/500	(+0,1) 8,0-8,2	i	0,2(0,4) 0,4(0,55)	7,8-8,0	0,9 - 1,5	-n 250

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

275-1200 AB 972 L

deflection	rev/min Control rod travel	Control rod travel mm rev/min (2a)	Intermediate Degree of deflection of control lever		Control rod travel	Lower rated Degree of deflection of control lever	speed rev/min	Control rod travel	Stiding s	leeve travel
1	2	3	4	5	6	7	8	9	10	11
ca.68	1 250 1 550	15,0-18,0 0 - 1	_	-	-	ca.16		min.9,7 8,0-8,2 500 =2,0	300 800 1260	0,8-1,8 3,8-4,2 8,2
ca.64	9,9 4,0	1240-1250 1325-1335				3 a)	800 300-6	0 - 1		-,-

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		limitation intermediate speed	(a)		Starting Idle switching	. 0	Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	trave! mm
1	2	3	4	5	6	7 mmRW	8	9
1200	75,5-76,5 (73,5-78,5)	1240-1250*			100	14,7-15,3		
					100-	 -195(80-215)		

Checking values in brackets

①

B. Governor Settings

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding si	leeve travel
Degree of deflection of control	Control rodtravel			Degree of deflection of control	•	Control rod travel	Degree of deflection of control		Control rod travel		1
lever	1	rev/min ((2a)]	rev/min 5	mm (4)	lever 7	rev/min 8_	mm (3) 9	rev/min	mm 11
ca.66	1340 155	15,2-17, 0 - 1,		-		-	ca.21		min.11,5 9,9-10,1 350= 2.0		0,4-1,5 3,5-4,0 8,2
ca.61	9,3 4,0	1340-135 1430-146		,			3a)	1050 250-6	0 - 1		

Forque control travel a =

0,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	l stop 💮	Rotational-speed (2b) limitation intermediate speed			Starting Idle switchir	\sim	Torque- travei	Control rod
rev/min cm³/1000 strokes		rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1300	74,5-75,5 (72,5-77,5)	1350-1350*	1100	74,0-76,0 (72,0-78,0)	100	109,25- 119,25	1300	10,8-10,4
5			500	61,5-63,5 (59,5-65,5)	100-1	70(80-190)	500	10,5-10,6
								,

Checking values in brackets

B. Governor Settings

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
of control	rod travel		(a)	Degree of deflection of control		Control rod travel	Degree of deflection of control	1	Control rod travel		0
lever	mm 2	rev/min 3	(2a)	lever	rev/min 5	mm (4) 6	lever	1	mm (3) 9	rev/min 10	mm 11
				1					l		
							(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed (4a)	Fuel deliv	very characteristics 58 speed 5b	Starting Idle switchir	fuel delivery 6	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min	rey/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

^{* 1} mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5,7v2

2. Edition

supersedes

4.80

company:

Daimler-Benz

engine:

OM 352A

126 kW(171 PS)

PES 6A 90D 410RS 2596 RQV 300-1400 AB1066-DL

1 - 5 - 3 - 6 - 2 - 4 $0 -60 -120 -180 -240 -300 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	13,1+0,1	7,6 - 7,7	0,3(4,5)			
300 500/500	8,9-9,1 -	1,1 - 1,7 C, col.4-5	0,2(0,4) 0,4(0,55)		·	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Slidings	leeve travel
Degree of deflection of control	rev/min Control rod travel	Control rod (1a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm	rev/min (2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	1
1	2	3	4	5	6	7	8	9	10	11
ca.68		15,2-17,8	-	-	-	ca.16	100	min.10,5	300	1,2
	1800	0-1					300	¹ 8,9 - 9,1	500	2,5-2,7
ca.62	12,1	1440-1450	1				740-	300 =2,0	1450	8,6
	4,0	1595-1625				400-470				
						3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed	high idle speed (Sh)		Starting idle switchir	fuel delivery 6	Torque- travel	control 5
rev/min 1	cm ³ /1000 strokes	rev/min 4a	rev/min 4	cm ³ /1000 atrokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm g +0,2
LDA 1400	0,7 bar 76,5-77,5 (74,5-79,5)	1440-1450*	LDA 500 LDA 500	0,7 bar 72,5-74,5 (70,5-76,5) 0 bar 58,0-60,0 (56,0-62,0)	100 100-2	72,25-82,25 220(80-240)	1400 1225 1050 500	13,1 13,4 14,0 14,3

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

MB 5,7 v 2

-2-

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
2596 with 1066-1DL	0,7	0,35 0,225 0	14,3 - 14,4 14,0 - 14,1 13,4 - 13,6 13,0 - 13,1

Notes.

Testoil-ISO 4113

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5,7 3. Edition

PES 6 A 90 D 410 RS 2596 ROV 300-1400 AB 1066 DL

supersedes

3.80

company:

Daimler-Benz

engine:

OM 352 A

(124 kW(169 PS)

1 - 5 - 3 - 6 - 2 - 4 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Cy	1	6

Rotational speed rev/min	in mm cm³/100 strokes cm³/ 2 3 cm³/4		1 .	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,9-13,0	7,1 - 7,2	0,3(0,45)			
	8,2-8,4		0,2(0,4)			
500/500	. -	C. 4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed	1	Slidina s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control red travel mm rev/min 3	(1a) (28)	Degree of deflection of control lever 4	rev/min 5	Control rod travel	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	1) mm
ca.68	1400 1750	15,2-17 0 -	.8 î	-	-	-	ca.15	730-	min.9,8 8,2-8,4 790= 2,0	300 485 1470	1,2-1,3 2,4-2,6 8,3
ca.60	11,9 4,0	1440-14! 1575-16					3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro- Test oil ter		Rotational-speed 2b limitation intermediate speed			Starting Idle switchir	•	Torque- travel	control 5	
rev/min 1	cm³/1000 strokes	rev/min 4a 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9 +0,2	
LDA 1400	0,7 bar 71,5-72,5 (69,5-74,5)	1440-1450	LDA 500 LDA 500	0,7 bar 70,5-72,5 (68,5-74,5) 0 bar 56,0-58,0 (54,0-60,0)	100 100-2	72,25-82,25 220(80-240)	1400 1225 1050 500	12,9 13,2 13,7 14,1	

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n ≈

500

rev/min decreasing pressure ~ in bar gauge pressure

MB 5,7 v

-2-

Measurement diminution Setting Pump/governor Control rod traveldifference Gauge pressure = bar mm (1) Gauge pressure = 2596 with 1066 0,7 14,1 - 14,2 0,35 13,8 - 13,9 13,2 - 13,4 0,23 12,8 - 12,9 0

Notes

Festoil-ISO 4113

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

A24

En

A.24

Festoil-ISO 4113

WPP 001/4 MB 5,7 v 2

3. Edition

PES 6 A 90 D 410 RS 2596

ROV 300-1400 AB 1066-1DL

supersedes 8.80

1 - 5 - 3 - 6 - 2 - 4

 $0 -60-120-180-240-300 \pm 0,50 (0,75)$

company: Daimler-Benz OM 352 A

engine:

126 kW (171PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	12,4+0,1	7,6 - 7,7	0,3(4,5)			
300 500/500	8,9-9,1 	1,1 - 1,7 C, col.4-5	0,2(0,4) 0,4(0,55)	I .		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed	I	inte	rmediate	rated sp	ed	-	Lower rated	speed			Sliding sleeve travel	
Degree of deflection of control	rev/min Control rod travel	mm	リdef	ree of ection ontrol		Control travel		Degree of deflection of control		Control travel		Silding S	1
lever	mm	_	a) leve	er	rev/min	mm		lever	rev/min	mm	(3)	rev/min	mm
'	2	3	- 4		5	6		7	8	9		10	11
ca.68	1400 1800	15,2-17, 0 - 1	8	-	-		-	ca.16	100 300	min. 8,9-		300 500	1,2 2,5-2,7
	 -		-						740-	=008	2,0	1450	8,6
ca.62	11,4	1440-145 1575-160						400-470					
				i				3 9					

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed	Fuel deli high idle :	very characteristics 5a poeed 5b	Starting idle switchir		Torque- travel	control 5
rev/min 1	cm ³ /1000 strokes .	rev/min 4a) 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes	rev/min 8	travel mm 9 +0,2
LDA 1400	0,7 bar 76,5-77,5 (74,5-79,5)	1440-1450*	LDA 500 LDA 500	0,7 bar 72,5-74,5 (70,5-76,5) 0 bar 58,0-60,0 (56,0-60,0)	100	72,25-82,25 15,8 - 16,2 RW -220(80-240)	1400 1225 1050 500	12,7 13,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.80

D. Adjustment Test for Manifold Pressure Compensator

Testatn =

 $500~\text{rev/min} \frac{\text{decreasing}}{\text{increasing}}$ pressure – in bar gauge pressure

MB 5,7 v 2

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Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
2596 with 1066-1	0,7		13,6 -	13,7
DL		0,35	13,3 -	
		0,225	12,7 -	12,9
		0	12,3 -	12,4

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

2. Edition

<u>En</u>

PES 6 A 95 D 410 LS 2542

RQV 250-1100 AB 956 L

supersedes 10.79

WPP 001/4 MAN 11,1 p 4

company: M A N

gine: D 2566 ME (177 kW 241 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1.45-1.65) mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mॡ 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0+0,1	12,6 - 12,8	0,3(0,6)		,]
250	5,9-6,1	0,9 - 1,5	0,3(0,5)	ļ		
500		C. 4-5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	1	Intermediate	rated spe	eed	Lower rated	speed		Sliding s	leeve travei
deflection	rev/min Control rod travel	Control rod tale	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
1	ww	rev/min (2s)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm .
1	2	3	4	5	6	 	8	9	10	11
ca.68	1100 1300	15,2-17,8 0 - 1				ca.10		min.7,5 5,9-6,1 380 =2,0	600	0,4-1,2 4,2-4,4
ca.48	11,0 40	1140-1150 1180-1210				3a	500	0 - 1	1120	8,3

Torque control travel a = 0 mr

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics (5a)	Starting idle switchir	<u> </u>	Torque- travel	control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1100	124, 5- 126, 5 (122, 5- 128, 5	1140-1150*)	500	max. 113,5 (max. 115,5)	100	124,0-134,0		
					100-	170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80



WPP 001/4 DAF 6,2 e

4. Edition

En

superseries 8.76

PE 6 A 85 D 320 RS 2466 EP/RSV250-1300 A1B514R,781R 250-1200 A1B514R

company: (1) (2) engine:

DAF DF 615 (1) DD 575 (2)

250- 900 A7B566R Testing with "B" leads - cold-start test 781R, see page 3!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Port closing difference between control-rod travel 9 and 21 3 - 4

Port closing at pres	troke 2,	15+0,1 (RW9)	mm (from BDC	cont	rol-rod trave	1 9 and 21 3 - 4
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	mm	2	mm 6
					 	
1006	9	4,2 - 4,5	0,4			_ }
200	6 12 9	1,3 - 2,0 7,4 - 8,2 2,4 - 3,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250-1300

								200 1000		
Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated sp	eed	3 To	rque control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
ca.72	1300	16,0				ca.26	250	6,0		
	1340 1380	11,2	without spring	auxı	liary		100 250	19 · 21 5,7-6,3	400	0
5	1360 1400 1500	7,0-10,0 2,2- 5,4 0,3- 1	with auxiliary spring				300 440	3,8-4,8 0 - 1	290	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	ad stop	6 Rotational- speed limitat.		et delivery aracteristics	Starting Idle	fuel delivery	Sa) idl	e stop
Test oil temp rev/min 1	o. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rav/min 8	Control rod travel mm 9
1000	54,5-56,5 (53,0-58,0)	1340-1350*			100	max. RW	250	6,0
	}							./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.77

B. Governor Settings

Degree of deflection of control lever	Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control- lever deflection in degrees 7	rev/min	rated speed Control rod travel mm 9	rev/min	rque control Control rod travel mm
ca.72	1300 1340 1380 1360 1400 1500	16,0 11,2 5,7 7,0-10,0 2,2-5,4 0,3-1	sprir	auxil		ca.26 y	100 250 300 440	6,0 19 - 21 5,7-6,3 3,8-4,8 0 - 1	400 290	0 1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat.		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
rev/min 1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
(2)	Pay attention nameplate with			nd quantity red	100 uction	max. RW on	250	6,0	

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

250-900

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	intermed	Intermediate rated speed 4 5 6			Lower rev/min 8	rated speed Control rod travel mm 9	3 To rev/min 10	rque control Control rod travel mm
ca.57	900 930 960	16,0 11,6 6,0	without auxiliar spring			ca.24 y	250 100 250	6,0 19 - 21 5,7-6,3	600 370	0 1,2-1,8
29	950 970 1020	5,2-9,6 2,2-6,0 0,3-1,0		with auxiliary spring			300 370	2,4-4,0 0 - 1	370	1,2-1,0

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	Rotational- speed limitat.		iel delivery paracteristics	Starting f	uel delivery (5)	4a Idle stop	
Test oil t rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7		Control rod travel mm 9
In a	ccordance with	pecial name	plate	on pump!	100	max. RW	250	6,0
		940-950*		•				•
								./.

Checking values in brackets

Testing of cold-start device — governor 781R: Pump not driven. Test disengaging force with spring scale at control rod. Test specification 3.5 ± 0.3 kp. With pump being driven at idle speed, position stop screw of holder such that control rod is advanced to 20.5 - 0.5 mm control point when cold-start device is operated. Then increase speed and observe when control rod disengages from start control point. Disengaging speed must be between n = 800 and 1000 min⁻¹.

estoil-ISO 4113

VDT-WPP 001/4 MAN 9,7 p

2. Edition

En

PES 6 A 95 D 410 RS 2128

EP/RSV 250-1100 A1 B 1089 DL

supersedes

company: MAN

engine: D 2156 MTN 5 (256 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.95 + 0.1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ² /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1000	9	7,5 - 8,0				
	6	3,2 - 4,2				
200	6	0,5 - 1,4				
						1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control	rated speed rev/min	Control rod travel	Intermediate Degree of deflection of control lever	Degree of Control rod deflection travel of control			Lower rated speed Degree of deflection of control lever rev/min 8 9			que control Control rod travel
ca. 60	1100 1140	16,0 12,0				ca . 25	250	6,0	1100	0
(5)	1180 1100 1225 1320	7,0 ca 12,4 ca 4,0 0,3 - 1,0						19 -21 5,7-6,3 1,8-3,9 0 - 1	400	0,2-0,4

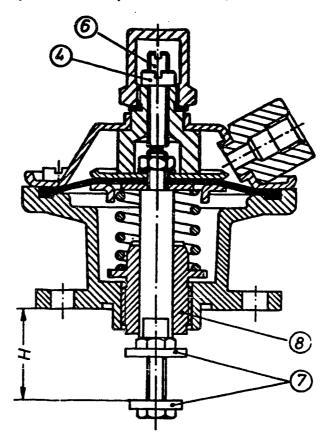
The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Gavernor

2 Full-los	ad stop	6 Rotational- speed limitat.		el delivery rracteristics	Starting Idle	fuel delivery	5a idle stop		
Test oil temp rev/min 1		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev <i>i</i> min 8	Control rod travel mm 9	
LDA 1100	0,5 bar 127,5 - 129,5	1140-1150*	LDA 800	0,5 bar 131,0 - 134,0	100	15,5 - 16,5	250	6,0	
			LDA 5 00	0 ber 80,5 - 84,5					
								./.	

Checking values in brackets

EP/RSV with manifold-pressure compensator (LDA)



1. Perform basic adjustment of pump and setting of governor without LDA as described in WPP 001/4 and 1st Supplement.

Set full-load delivery - quantity indication with charge-air pressure - at full-load stop screw of governor.

- 2. Pre-adjust LDA:
 Unscrew upper stop screw (6) until diaphragm makes contact.
 Then pre-tension to 0.5 mm.
 In this position, set dimension H = 22.5 mm at screw with lock nut (7).
- 3. Further settings are to be performed accordingly in line with WPP 001/4 7th Supplement as of Fig. 14:
 - Re Fig. 14 Only fit LDA; stop plate not necessary since testing can be performed with solenoid fitted.
 - Re Fig. 15 Only set delivery at 0 kp/cm² at adjusting nut (4).
 - Re Fig. 16 Adjustment not necessary; fit closure cap.
 - Re Figs. 17 19 Section D (max. pressure = 0.5 bar); adjustment test at
 n = 700 min⁻¹ decreasing pressure -; adjust in accordance
 with Page 2 at nut (8).
 - Re Figs. 20 24 Accordingly pay attention to 24 V solenoid with Fig. 22!

D. Adjustment Test for Manifold Pressure Compensator

MAN 9,7p -2

Testatn =

700

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel-
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
2128 with 1089 DL	0,29	0,11	0,2 - 0,3
			1,4 - 1,8
}			
			·
			·
<u> </u>	<u> </u>		L

Notes:

(1) when n =

800

rev/min and gauge pressure = 0.5

bar (= maximum futt-load control rod travel)

estoil-ISO 4113

VDT-WPP 001/4

1. Edition

PES 8 A 75 D 320 RS 2463

ROV 300-1500 AB 912D (1)

913D (2) 914D (3)

IHC company:

engine:

DV 550C

Inlet pressure 2,5 bar (1) See note 1,2,3 -page 3!

(1 - 180 PS)* (2 - 160 PS)* (3 - 200 PS)*

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (2,3)

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1500	9,7	5,6 - 6,2	0,3			
1000	(± 0,05)	4,8 - 5,5	/O 7 4		7.	
300	ca.6,3	0,1 - 1,4 - 3,5 - 4,1 -	-(Cyl. 1 -(Cyl. 2	- 4 - 6 - 3 - 5	I	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV .. 912 D (1)*

Upper rated s	peed			Intermediate	rated sp	ed	Lower rated	speed	•	Sliding sleeve travel	
	rev/min Control	Control rod (19	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		①
	rod travel	mm rev/min (of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	- 11
ca.68	1600 2000	15,0-18,	,2	-	_	-	ca.10	250 400	0,5-8,2 2,9-4,5	1600	8,3
ca.65	1500 1600	15,0-17, 10,0-14,						500 650	2,3-3,3 1,1-2,1	1500	0
	1700	4,6-10,	-					860	0	700	0,3-0,4
	1940	U					<u>3</u>				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b limitation intermediate speed			Starting Idle switchir		Torque- travei	control 5
rev/min	cm³/1000 strokes	rev/min 4e	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	, travel mm
1 `	2	3	4	5	6	7	8	9
1500	59,0-60,0	1600-1610* 1650:	1000	51,0-53,0	100 300	111,5-134,5 ₎ 17,5- 18,5	Cyl.	2-3-5-8
		7-8mm RW Ch		ver point 30 U/min 250)	100 300	0)	Cyl.	1-4-6-7

Checking values in brackets

B. Gov	ernor	Settin	gs			RQV	913	B D RQV.	.913	D (2)* IH	C-Ppe?	2463
Upper rated	speed			Intermediate	ntermediate rated speed 🕝 🕴			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control lever	rev/min Controll rodtravel mm	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm (Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
ca.68	1600 2000 1500 1600 1700	15,0-1 0 15,0-1 10,0-1 4,6-1	7,6 4,0		-	-		ca.10	250 400 500 650 860	6,5-8,2 2,9-4,5 2,3-3,3 1,1-2,1	1600 1500 700	8,3 0 0,45- 0,65
	1940	0						(3a)				

Torque control travel a =

B Governor Settings

C. Settings for Fuel Injection Pump with Fitted Governor

				,				
Full-load de Control-rod Test oil tem	stop	Rotational-speed (2b) Ilmitation intermediate speed	Fuel deliv high idle s	rery characteristics 5a speed 5b	Starting Idle switchir	$\overline{}$	Torque- travel	Control cod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1500	50,0-51,0 (9,35mmRW)	1600-1610* 1650: 7-8mm RW C		47,0-49,0 over point 30 U/min 250)	100 300 100 300	111,5-134,5) 17,5- 18 _. 5) 0 0		2-3-5-8 1-4-6-7

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

RQV..914D (3)*

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Stiding st	eeve travel
	rev/min Control rod travel	Control rod	(la)	Degree of deflection of control]	Control rod travel	Degree of deflection of control	l	Control rod travel	J. I	1
of control lever	mm	rev/min	(2a)	lever	rev/min	mm 4	lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	2000 1500	15,0-18 0 15,0-17 10,0-14	,6	-	-	-	ca.10	250 400 500 650	6,5-8,2 2,9-4,5 2,3-3,3 1,1-2,1	1600	8,3
	1700 1940	4,6-10 0					3 a)	860	0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 2b limitation intermediate speed 4a	Fuel deliv high idle s	very characteristics 5a speed 5b	Starting Idle switching	fuel delivery 6	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm .
1	2	3	4	5	6	7	8	9
1500	67,0-68,0 (10,7mmRW)	1600-1610* 1650: 7-8mmRW Cha		er point 30 U/min 50)	100 300 100 300	111,5-134,5) 17,5- 18,5) 0 0		-3-5-8 -4-6-7

Checking values in brackets

- (1) Supply pressure 2.5 bar
- (2) Barrel 1: Start of dely. at CRT 10.7 = 1.95 + 0.05 mm cyl. 1-7-6-4 (90° each) Barrel 2: Port opening at CRT 10.7 = 3.95 + 0.05 mm cyl. 2-8-3-5 (90° each)
- (3) In start-of-delivery position of barrel 1 at CRT 10.7 mm, use setting device to position jaws of coupling horizontally and tighten screws to 25 30 N !

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 KHD 6,1 a

2. Edition

EP/RSV 325-1400 A8B674D, 707D 325-1150 A8B674D, 707D

supersedes company

engine

5.74 KHD

RS 2415

EP/RS 325/1325 A0B691D, 709D

BF 6 L 913

Testoil-ISO 4113

RS 2532

PES 6 A 85 D 410/3 RS 2366

See page 3 - 4! RS 2532
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.9 + 0.1

mm (from BDC)

Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm 2	cm ³ /100 strokes 3	cm³/ 100 strakes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
.9	4,1 - 4,5	0,4			
6	0,6 - 1,4				
9	1,4 - 2,2				
	travel (2) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	travel mm 2 cm3/100 strokes 3 9 4,1 - 4,5 6 0,6 - 1,4	travel mm 2 cm3/100 strokes 3 cm3/100 strokes 4 100 strokes 4 0 - 4 100 strokes 4 0 - 4 100 strokes	travel mm 2 cm³/100 strokes 100 strokes 4 2 2 2 2 3 4.1 - 4.5 0.24 6 0.6 - 1.4	travel mm 2 cm³/100 strokes 100 strokes 4 100 strokes 2 cm³/100 strokes 3 cm³/100 strokes 3 cm³/100 strokes 3

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV 325-1400 A8B674D, 707D

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	liate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	rev/min	rque control Control rod travel mm
ca.69	1400 1450 1500	16,0 10,5 4,0	witho sprin	out aux	xiliar	ca.20 y	325 200	5,5 19 - 21	1400	0
ca.68	1400 1510 1600	ca.10,0 ca. 4,0 0,3-1,5	with sprin	auxil ['] g	iary	·	325 500 650	5,2-5,8 1,2-3,3 0 -1,5	500	1,2-1,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) FL	ill-load stop .	6 Rotational- speed limitat			Starting f	Starting fuel delivery 5 4a ld		
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note. changed to .) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ² /1000 strokes 7	rev/min 8	Control rod travel mm 9
LDA ***	0,7 bar	***	LDA *** LDA	0,7 bar 0 bar	100	119,5-129,	325	5,5**
(inr	ease by ± 1,0 cm	l ₃ i)	500	43,5-47,5				./.

Checking values in brackets

* 7 mm less control rod travel than col. 2

11.77



B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mra		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm		rque control Control rod travel mm
ca.56	1150 1200 1250	16,0 11,1 5,4	witho sprin	ut aux	iliar	ca.21	325 200 325	5,5 19 - 21 5,5-5,8	1130	0
20	1220 1300 1380	7,5-10,4 1,3-3,6 0,3-1,5	with sprin	auxili g	iary		500 660	1,4-3,4 0 -1,5	500	1,0-1,2

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	Rotational- speed limital.	peed limital. Characteristics			ruel delivery 5	Idle stop	
rev/min	cm ³ /1000 strokes 2	changed to.) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9
LDA *** See	0,7 bar page 3 - 4!	☆★★	LDA *** LDA 500	0,7 bar 0 bar 43,5-47,5	100	119,5-129,	325	5,5**

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

EP/RS 325/1325 AOB691D, 709 D

Degree of deflection of control lever 1	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7	rev/min	r rated speed Control rod travel mm 9	1(9)	rque control Control rod travel mm 11
VH ca. 70 FH max.	1325 1400 1480 1550 1620	15,8-16,4 12,1-13,1 7,4- 8,8 2,8-4,8 0		-	•		325 270 400 550 900 1200 1400	8,3 9,0-9,8 6,0-6,8 3,5-4,0 3,3-3,9 2,4-3,0	1300 1000 600 [/]	0 0,8-1,0 1,2-1,4

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-luad stop	6 Rotational-	6 Rotational- speed limitat. 3a Fuel delivery characteristics			Starting fuel delivery 5 4a tdle stop			
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
LDA ***	0,7 bar	***	LDA *** 500	0,7 bar 43,5 ~ 47,5	100	119,5-129,5			
						·		./.	

Checking values in brackets En

^{* 1} mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

KHD 6,1 a

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
all governors	0,38;	0,10	0,2 - 0,3 1,6 - 2,0
			·
	•		

Notes:

Testoil-ISO 4113

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

NOTES:

- 1. ** Single-lever operation in the case of Liebherr excavators; therefore use shorter screw 1 423 400 031 and set it to 0.3 1.0 before stop.
- 2. Test EP/RS governor in accordance with MPP 001/4 KHD 1 c.
- 3. Perform LDA (manifold-pressure compensator) adjustment in accordance with W 420/305.
- 4. Dimension H = 22.5 mm basic setting of LDA.

C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load di Control-roa Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switching	fuel delivery ng point	Intermedi rotational Torque-c traval	speed
rev/min	cm³1000 strokes	rev/min	rev/min	cm ⁸ /1000 strokes	rev/min	cm ³ /1000 strokes		ww
1	2	3	4	5	6	7	8	
BF 6 L	913 - PES 6	A DRS2366,	2415	-F- or B-po	wer o	utput / re	v/min	
1400	88,0-90,0	1420	800	80,0-83,0	160	PS / n = 28	00	
1400	84,0-86,0	1420	800	66,0-69,0	142			
1325	87,5-89,5	1340	800	82,5-85,5		PS / n = 26	-	
1325	82,5-84,5	1340	800	66,0-69,0	140	,		
1250	87,0-89,0	1270	800	84,5-87,5	160			
1250 1250 1200 1200 1165 1150 1150	83,0-85,0 81,0-83,0 86,0-88,0 78,0-80,0 84,0-86,0 83,5-85,5 80,0-82,0 82,0-84,0	1270 1270 1220 1220 1180 1165 1165	800 800 800 800 800 800 800	76,0-79,0 69,5-72,5 84,5-87,5 68,0-71,0 84,5-87,5 84,5-87,5 72,0-74,0 84,5-87,5	148 140 156 135 152 152 142 147	PS / n = 25 PS / n = 24 PS / n = 24 PS / n = 23 PS / n = 23	00 00 00 00 30 00	
1075	82,0-84,0	1090	800	84,5~87,5		PS / n = 21		
1075	78,0-80,0	1090	800	76,0-79,0	136			
1050 1000 1000 900 875	76,5-78,5 82,5-84,5 77,0-79,0 82,0-84,0 68,0-70,0	1065 1015 1015 910 885	800 800 800 800 800	73,5-76,5 84,5-87,5 72,0-75,0 84,5-87,5 66,0-69,0	130 137 130 125	PS / n = 21 PS / n = 20 PS / n = 20	00 00 00 00	
750 750	85,0-87,0 78,0-80,0	760 760	-	-	105 I 100 I	· · · · · · ·		

Testoil-ISO 4113

Test Specifications

Fuel Injection Pumps 1 and Governors

WPP 001/4 2. Edition

PE 12 A 90 D 521 RS 2431

ROV325-1500 AB876

9.75

F,G,H,I,J, ./.
1 - 4 - 9 - 8 - 5 - 2 - 11 - 10 - 3 - 6 - 7 - 12

company: engine:

Baudouin DF 12

0 - 15-60-75-120-135-180-195-240-255-300-315° Testing with "B" leads

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,15-2,25) mm (from BDC)

Rotational speed rav/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	3	3,1 - 3,5	0,4			
	6 12	0,5 - 1,2 5,6 - 7,4				
200	9	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

ROV .. 876

Upper rated s	peed			Intermediate	ntermediate rated speed			Lower rated	speed	Sliding sleeve travel		
deflection of control	Control rod travel	Control rod travel mm rev/min	1a 2a	Degree of deffection of control lever	rev/min 5	Control rod travel mm (6	①	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	řev/min 10	1) mm 11
ca.68	1510 1580 1700 1800	15,0-18 9,3-14 0 - 0		<u>-</u>	-	-		ca.12	200 400 600 920	7,2-8,2 2,6-4,5 1,6-3,3	1510	8,3

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) (2)		limitation		Fuel delivery characteristics 5a high idle speed 5b		fuel delivery 6	Torque- travei	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1300	54,5-56,5	1540-1550*				•		
					325	8,25-14,25		
<u> </u>						ge-over poin -275 min-1		

Checking values in brackets

①

ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

ſ			[l				1	
engine power Full-load delivery Control-rod stop		elivery I stop	Rotational-speed limitation	Fuel deliv		Idle	•	Intermediate rotational speed Torque-control	
i	Test oil temp 40°C (104°F)		rev/min	rev/min		switchin rev/min	cm ³ /1000 strokes	travel	mm
l	1	2	3	4	5	6	7	8	
r									

F
1300 53,0 - 55,0 1540-1550*

G
1300 57,5 - 59,5 1540-1550*

H
1300 64,5 - 66,5 1540-1550*

I
1300 71,5 - 73,5 1540-1550*

1300 97,5 - 99,5 1540-1550*

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 6,2 c

company:

3. Edition

PES 6 A 90 D 320/3 RS2393 RS2464

EP/RSV 300-1000 A7 B529DR

supersedes 4.75

325-1500 A2

MWM engine:

As from FD 821 the idle auxiliary-spring has been changed from 1 424 641 000 to ... 001. New values enclosed.

TD 226-6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,1 - 5,5	0,4			
	6	1,6 - 2,6				
200	9	1,9 - 2,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RSV 300-1000

Upper rated speed			Intermediate rated speed			(4) Lower	r rated spe	(3) Torque control		
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	[6	7	8	9	10	11
ca.68	1000 1050	16,0	without auxiliary spr			ca.28	300	5,5		
	1100	8,5 2,4	without	. aux i	ilary spr	119	100 300	19 - 21 5,7-6,3		! !
©a.67	1030 1070 1120	8,0-9,0 2,0-4,0 0,3-1,0	with au	xilia	ry spring		450	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fue! Injection Pump with Fitted Governor

2 Full-i	oad stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting Idle	fuel delivery	5a Idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
See pa	ige 3 - 4!							

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.79

B. Governor Settings

Uppe Degree of		Control rod	Intermediate rated speed			4 Control-	Lowe	er rated speed Control rod	3 Torque control Control rod		
deflection of control lever	travel mm 2	travel mm rev/min 3	4 5 6		lever deflection in degrees 7	rev/min	travel mm 9	rev/min	travel mm 11		
ca.58	1500 1580 1630	16,0 9,0 4,2	with spri	out au	xiliar	ca.20 y	325 100 325	5,5 19 - 21 5,7-6,3	-	•	
ca.56	1530 1580 1620	8,0-9,0 3,0-4,0 0,3-1,0		with auxiliary spring			420 520	1,4-3,4			

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	III-load stop	Rotational- speed limitat.	(38) FL	rel delivery paracteristics	Starting fuel delivery 5 48 Idle			e stop
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
See p	age 3 - 4!							

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

(1) Uppe	r rated speed		Intern	nediate rat	ed speed	4	Lower rated speed			rque control
Degree of deflection of control lever	travel mm	Control rod travel mm rev/min				Control- lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
<u> </u>	2	3	4	5	6	 '	8	9	10	11
						ļ			4	
			4							
_							}			
(2a)							İ			

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	Rotational- speed limitat.	iel delivery paracteristics	Starting fuel delivery 5 4a Idle stop				
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	changed to)	rev/min 4	cm³/t000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
				•				
			•					·

Checking values in brackets En

* 1 mm less control rod travel than col. 2

engine po Full-load d Control-ro	elivery d stop	Rotational-speed limitation	Fuel d'eliv	very characteristics	idle	fuel delivery	Intermed	l speed	
Test oil ter	mp 40°C (104°F) cm ²⁷ 1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	i	cm ³ /1000 strokes	travei rev/min	mm	
F150 1250	PS / 2500 87,0-89,0	min ⁻¹ 1270	800	84,0-87,0		<u> </u>		 	4
B143 1250	PS / 2500 84,0-86,0	min-1 1270	800	79,5-82,5					
F148 1200	PS / 2400 86,0-88,0	min ⁻¹ 1220	800	84,0-87,0					
B141 1200	PS / 2400 82,0-84,0	min ⁻¹ 1220	800	79,5-82,5					
F146 1150	PS / 2300 84,0-86,0	min-1 1170	800	84,0-87,0					
B139 1150	PS / 2300 81,0-83,0	min ⁻¹ 1170	800	79,5-82,5					
A125 1140	PS / 2300 80,0-83,0	min-1	1150	74,0-76,0					
F143 1100	PS / 2200 84,0-86,0	min ⁻¹ 1120	800	84,0-87,0					,
B137 1100	PS / 2200 81,0-83,0	min ⁻¹ 1120	800	79,5-82,5					
A134 1090	PS / 2200 80,5-83,5	min ⁻¹	1100	74,0-76,0					
F 140 1050	PS / 2100 85,0-87,0	min ⁻¹ 1070	800	84,0-87,0					
B134 1050	PS / 2100 82,0-84,0	min-1 1070	800	79,5-82,5					
A122 1040	PS / 2100 80,5-83,5	min ⁻¹	1050	76,0-78,0					
F135 1000	PS / 2000 86,0-88,0	min ⁻¹ 1020	800	84,0-87,0				٠	
B130 1000	PS / 2000 81,0-83,0	min-1 1020	800	79,5-82,5					
A119 990	PS / 2000 80,5-83,5	min-1	1000	73,0-75,0					
900	PS / 1800 82,0-84,0	min ⁻¹ 910	750	78,5-81,5					
A112 890	PS / 1800 89,5-92,5	min ⁻¹	900	75,0-77,0					
B110 · 750	PS / 1500 86,0-88,0	min ⁻¹ 760	650	74,0-77,0		- A	100 P	S see p	age 4 -

A 100 BHP at 1500 min/1

740 87.5 - 90.5 ----- 750 86.0 - 88.0

The nameplate described on $\underline{\text{MWM 1.5 a}}$ has recently been expanded - in columns n = rotational speed and Q = $\underline{\text{full-lod}}$ fuel delivery - to include two rotational speeds and two fuel deliveries, to enable more exact adjustment in the case of regulators with torque control.

Accordingly - in deviation from VDT-WPP 001/4, 1st addendum, Adjustment of the Regulator and the Pump - the following points will apply:

- (1) Adjustment of the control spring: remains.
- (2) Adjustment of the full-load fuel delivery: in accordance with nameplate, n = (1st rotational speed) and Q = (1st fuel delivery), or according to Sect. C, Columns 1-2.
- (3) Adjustment of the torque control: is adjusted until the control-rod travel is changed as indicated in (2), or according to the new nameplate, until the 2nd fuel delivery is obtained at the 2nd rotational speed; or accordance with Section C, Columns 4-5.
- (6) Start of speed regulation: is readjusted according to the nameplate n = (1st rotational speed + 20 min/1) or Column 3. However, for A-power output: readjust until the fuel delivery as shown in Columns 4-5 has been attained.

New pumps from the warehouse in Stuttgart do not have the spring retainer! For that reason, use the old spring retainers, or order new ones from MWM in accordance with the old nameplate!

Festoil-ISO 411

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MB 3,8 g

3. Edition

PES 4 A 90 D 410 RS2294 RQV 300-1425 AB740,768 (1) RS2294 RQV 300-1425 AB780,781 (2) RS2294 RQV 300-1400 AB836,884 (3-4)

supersedes 12 company: Da

12.74
Daimler-Benz

engine:

OM 314 (85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15+0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,5 5,0	0,4			
200	6 12 9	1,8 - 2,6 7,3 - 8,2 2,0 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV..740,768 (1)

Upper rated s	speed	•		Intermediate	rated sp	ed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min	(18) (28)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm
<u> </u>	-	-		7	-			 			- ' '
ca.66	1425 1500 1550	16,0-19 11,6-16 8,2-13	,0				ca.10	100 300 450	6,6-7,8 4,9-6,4 3,0-4,2	400 1425	1,4-2,2 8,1
	1650 1790	1,4-8 0	,0					600 760	1,3-2,8 0	•	-
							3 8	l			

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

l .	stop p. 40°C (104°F) 2	intermediate speed		idle switchi)	Torque- travel	Control od travel	
1	2	3	4	5	6	7	8	9
(1) 1400	63,0-65,0	1460-1470*			100			age 4
(inrea	se by ± 1,5 d	m³!)			rnang 180	e-over point 250 min-1		./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

RQV780, 781	(2)
-------------	-----

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	leeve travel
Degree of deflection of control lever	Control rodtravel	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min		Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68		16,0-19 10,8-15 3,3-10 0 - 7 0	,3 ,0				ca.10	200 300 450 600 770	6,0-7,4 4,9-6,6 3,0-3,9 1,4-2,8		1,2-2,2

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	d stop	Rotational-speed (2b) limitation intermediate speed			Starting Idle switchir	\sim	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
(2) 1400	63,0-65,0	1460-1470*			100	72,25-82,25	700 1300	/ 780 / 781
		4		CI		over point 250 min-1		

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

RQV..836 (3)

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Sliding s	eeve travel
1		Control rod (1a	denection	1	Control rod travel	Degree of deflection	I	Control rod travel		0
of control lever	rod travei mm	mm rev/min (2a	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1440 1780	15,0-18,				ca.12	150 250	7,2-8,2 6,2-7,4	400 1440	1,4-2,0
ca.67	1400	15,0-17,	7		ļ		400	3,7-5,1	1440	8,3
	1500	8,4-13,		Ī			600	1,5-2,8	-	-
1	1600	1,5-8,		}			760	0		
	1760	0				39				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		intermediate speed	Fuel deliv	very characteristics 5a speed 5b	Starting Idle switchin	fuel delivery 6	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm
(3) 1400	63,0-65,0	1460-1470*			100	72,25-82,25	1300	
						e-over point 250 min ⁻¹		./.

Checking values in brackets

* 1 mm less control rod travel than coi. 2

B. Governor Settings

Upper rated :	speed			Intermediate	rated spe	Intermediate rated speed				Sliding sleeve travel	
Degree of deflection of control		Control rod travel mm		Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	rev/min	(1)
lever	mm 2	rev/min	(2a)	lever 4	rev/min 5	mm (4)	lever	rev/min 8	mm (3)	10	11
ca,66	1440 1550 1680 1820	15,0-1 8,4-1 0 - 0			-	-	ca.15	200 300 450 600 770	6,4-7,8 5,3-6,6 3,0-4,6 1,6-2,8	400 1440	1,4-2,0

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	Stop	Rotational-speed (2b) limitation intermediate speed	Fuel deliv	ery characteristics (5a)	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes 2	rev/min 48	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
(4) 1400	63,0-65,0	1460-1470*			100	72,25-82,25		
					180-2	250		

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Upper rated:	speed			Intermediate	rated spe		Lower rated	speed	Control rod	Sliding s	eeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min	(la) (2a)	Degree of deflection of control lever		travel	Degree of deflection of control lever	rev/min	travel 3	rev/min	mm
ĺı	2	3	•	4	5	6	7	8	9	10	11
							(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	Plivery I stop pp. 40°C (104°F) 2	intermediate speed	Fuel deliv	rery characteristics 5a peeed 5b	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ /1000 strakes	rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9

Checking values in brackets

* 1 mm less control rod travel than col. 2

MB 3.8 g

Setting of air-operated intermediate-speed stop (768):

Start of adjustment

0.2 bar

End of adjustment

3.0 bar

 $n=650~\rm{min}^{-1}$ - approx. CRT 5 = 16.25-18.25 cm³/1000 strokes at 3.0 bar (adjust with adjusting screw at lever shaft).

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 1,5 b 3. Edition

En

PES 2 A 75 ^C _D 320 RS1164, 1244 EP/RSVA2B398DR supe 3 RS1165, 1245 EP/RSVA7B407DR comp 4 RS1166, 1246A7B505DR engir 6 RS1167 EP/RSVA2B407DR -320/3A2B505DRA2B505DR Instructions P. 3 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,45 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,2 - 6,6	0,4			
200	9 9	3,2 - 3,7 1,9 - 2,8				
		<u> </u>				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

300-1300 A2B398DR

Degree of deflection of control	rated speed rev/min 2	Control rod travel mm 3	deflection travel of control			4 Lower Degree of deflection of control lever	rev/min	Control rod travel mm	3 To	que control Control rod travel mm
ca.49	1300 1350 1400	16,0 11,7 6,7	without spring	t auxi	liary	ca.18	300 100	6 19 - 21		
(5)	1380 1480 1600	7,4-9,8 * 1,8-4,1 0,3- 1	with au spring	ıxilia:	ry		300 500 700	5,7-6,3 1,5-3,6 0 - 1	See n	ote

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	oad stop	6 Rotational- speed limitat.	3a) Fu	el delivery aracteristics	Starting	fuel delivery	Sa) Idi	e stop
Test oil tem rev/min 1	p. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min	Control rod travel mm
See pa	age 4							
								./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.77

Upper rated s	Upper rated speed		Intermediate rated speed			Lower rated speed			Sliding sleeve travel	
Degree of deflection of control		Control rod travel	Degree of deflection of control			Degree of deflection of control		Control rod travel		ontroi travei
lever	rev/min	mm	lever	rev/min	mm	tever	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11

300-1500 A2B398DR

300-900 A7B407DR

300-1000 A7B407DR, 505DR

ca.68	1000 16,0		ca.28 300	6,0
	1040 10,8 1070 6,0	*	100	19 - 21
	1050 7,4-10,6		300 400	5,7-6,3 *** 3,0-4,4
	1100 3,0- 5,0 1200 0.3- 1	**	580	0 - 1

325-1500 A2B407DR, 505DR

ca.58		16,0		ca.20 325	6,0	
	1550 1600	11,6 7,0	*		19 - 21 5,7-6,3	***
	1650	7,5-10,0 3,1-5,3 0,3-1	**	500	2,0-3,9 0 - 1	

- * without auxiliary spring
- ** with auxiliary spring
- *** See note

Testoil-ISO 4113

engine p Full-load Control-re Test oil te	delivery	Rotational-speed iimitation	Fuel deln	very characteristics	Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
32 PS	/ 2100 min-1	- D 208 - 3 -	Farme	r 2 D -				
1050	39,0-40,0	1070	700	44,0-46,0				
32 PS	/ 1950 min-1	- D 308 - 3 -	231 G	Т -				
975	39,0-40,0	990	700	44,0-46,0				
38 PS	/ 2600 min-1	- D 208 - 3 -	Farme	r 2 -				
1300	41,0-42,0	1320	700	41,0-43,0				
45 PS	/ 2075 min-1	- D 208 - 4 -	Farme	r 3 S -				
1030	41,0-42,0	1050	700	46,0-48,0				
55 PS	/ 2300 min ⁻¹	- D 208 - 4 -	Favor	it 3 -				
1150	45,0-46,0	1170	700	47,0-49,0				
55 PS	/ 2400 min ⁻¹	- D 208 - 4 -	Farme	er 4 S	<u></u>			
1150	46,0-47,0	1200	700	48,0-50,0				
80 PS	/ 2300 min-1	- D 208 - 6 -	Favor	rit 4 -				
1150	44,0-45,0	1170	700	47,0-49,0				

Notes:

The nameplate described on $\underline{\text{MWM 1.5 a}}$ has recently been extended in column n = (engine speed) and Q = (delivery) to include 2 engine speeds and 2 injected-fuel quantities, so as to be able to effect more precise adjustment in the case of governors with torque control.

As opposed to WPP 001/4, adjustment of governor (torque control) and full-load delivery with fuel-delivery characteristics, the following items apply:

- (2) Adjustment in accordance with nameplate n = (1st engine speed) and Q = (1st injected-fuel quantity); or in accordance with columns 1 and 2*.
- (3) Is adjusted until there is a change in control-rod travel as read off under (2) or (with new nameplate) until 2nd injected-fuel quantity is reached at 2nd engine speed; or in accordance with columns 4 and 5*.
- (6) Is adjusted in accordance with nameplate n = (1st engine speed + 20 min⁻¹); or column 3*
- * The full-load data arranged according to engine types apply in line with the above note to repairs performed on Fendt tractor vehicles on which the new nameplate (with 2 engine speeds and injected-fuel quantities) has not yet been introduced.

Checking values in brackets

* 1 mm less control rod travel than col 2

◑

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ² 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	mm
<u>'</u>	<u> </u>	1	 	<u> </u>	 _	<u> </u>	+	

F 31 PS / 3000 min⁻¹

1500 47,0-49,0 1520

B 30 PS / 3000 min-1

45,0-47,0 1500 1520

A 28 PS / 3000 min-1

1500 47,0-49,0 1520

F 30 PS / 2800 min-1

47,5 - 49,5 1420 1400

B 29 PS / 2800 min-1

46,0-48,0 1400 1420

A 27 PS / 2800 min-1

1400 47,5-49,5 1420

F 29 PS / 2600 min-1

1300 49,0-51,0 .1320

B 28 PS / 2600 min-1

47,5-49,5 1300 1320

A 26 PS / 2600 min-1

1300 49,0-51,0 1320

F 28 PS / 2500 min-1

1250 48,5-50,5 1270

B 27 PS / 2500 min-1

1250 46,5-48,5 1270

A 25 PS / 2500 min⁻¹

1250 48,0-50,0 1270

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine pov Full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deliv	very characteristics	Idle	fuel delivery	intermed rotations Torque- travel	al speed
rev/min	cm ⁹ 1000 strokes	rey/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
27 PS	5 / 2400 min ⁻¹	<u> </u> -	•					
1200	47,5-49,5	1220						
B 26 PS	5 / 2400 min-1	1						
1200	46,0-48,0	1220						
A 24 PS	5 / 2400 min ⁻	1						
1200	47,0-49,0	1220						
F 26 PS	S / 2300 min-	1						
1150	46,5-48,5	1170						
B 25 PS	S / 2300 min ⁻	1						_
1150	44,5-46,5	1170						
A 23 PS	S / 2300 min-	1						
1150	45,5-47,5	1170						
F 25 P	S / 2200 min-	1						
1100	44,0-46,0	1120						
B 24 P	S / 2200 min-	1						
1100	42,0-44,0	1120						
A 22 P	S / 2200 min-	1						
1100	43,5-45,5	1120						
F 24 P	S / 2100 min-	1						
1050	43,5-45,5	1060						
B 23 P	S / 2100 min-	1	· · · · · · · · · · · · · · · · · · ·					
1050	41,0-43,0	1060						
A 21 P	S / 2100 min-	1						
1050	42,0-44,0	1060						

-6-

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (1	ļ:	Rotational-speed limitation			Starting fuel delivery Idle switching point		Intermed rotational Torque-c travel	speed
rev/min cm31000	strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1 2		3	4	5	6	7	8	
F 23 PS / 20	00 min ⁻¹		•			•		•
	-44,5	1060		·				
B 22 PS / 20	00 min ⁻¹							
1000 40,0	-42,0	1060						
A 20 PS / 20	00 min-1				· 			
1000 41,0	-43,0	1060						
B 20 / 1800	min-1							
900 41,0	-43,0	910						
A 18 PS / 18	00 min ⁻¹							
900 41,0	-43,0	910						
B 16 PS / 15	500 min-1							
750 39,5	5-41,5	760						
A 15 PS / 15	500 min ⁻¹	1						
750 41,0	0-43,0	760						

engine po Full-load o Control-ro Test oil te	1elivery	Rotational-speed limitation	Fuel deli	very characteristics	Idle	fuel delivery	Intermed rotationa Torque- travel	l speed
rev/min	cm ³ 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	!
F 46,	5 PS / 3000 mi	n-1						
1500	46,5-48,5	1520						
B 45 F	PS / 3000 min ⁻	1						
1500	45,0-47,0	1520						
A 42 I	PS / 3000 min ⁻	1	*					
1500	46,0-48,0	1520						
F 45 I	PS / 2800 min ⁻	1						
1400	46,5-48,5	1420						
B 43,	5 / 2800 min ⁻¹		 					
1400	45,0-47,0	1420						
A 40,	5 PS / 2800 mi	<u>n-1</u>						
1400	45,5-47,5	1420						
F 43,	5 / 2600 min-1							
1300	47,5-49,5	1320						
B 42 I	PS / 2600 min	1						
1300	45,5-47,5	1320						
A 39 I	PS / 2600 min ⁻	1						
1300	47,0-49,0	1320						•
F 42 I	PS / 2500 min ⁻	1						
1250	46,5-48,5	1270						
B 40,	5 PS / 2500 mi	<u>n-1</u>						
1250	44,5-46,5	1270						
	5 PS / 2500 mi							
1250	45,5-47,5	1270						

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ⁹ 71000 strokes	rev/min	rev/min	crn ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 40,5 PS / 2400 min⁻¹
1200 46,0-48,0 1220

B 39 PS / 2400 min⁻¹
1200 44,0-46,0 1220

A 36 PS / 2400 min-1 1200 45,0-47,0 1220

F 39 PS / 2300 min-1 -1150 44,0-46,0 1170

B 37,5 PS / 2300 min⁻¹
1150 42,5-44,5 1170

A 34,5 PS / 2300 min⁻¹
1150 42,5-44,5 1170

F 37,5 PS / 2200 min⁻¹
1100 41,5-43,5 1120

B 36 PS / 2200 min-1 1100 39,5-41,5 1120

A 33 PS / 2200 min-1

1100 41,0-43,0 1120

F 36 PS / 2100 min⁻¹
1050 41,0-43,0 1060

B 34,5 PS / 2100 min⁻¹
1050 39,0-41,0 1060

A 31,5 PS / 2100 min⁻¹
1050 39,0-41,0 1060

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed	Fuel delivery characteristics		Starting fuel delivery Idle switching point		Intermediate rotational speed Torque-control travel	
lea/win	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm ·
1	2	3	4	5	6	7	8	

ı	LGA\WIU	cm 71000 strokes	rev/min	rev/min	i	§	cm ² /1000 strokes		111111	ĺ
	1	2	3	4	5	6	7	8		ĺ
	F 34,5	PS / 2000 mi	<u>n-1</u>	•	•					
	1000	40,0-42,0	1010			·				_
	B 33 I	PS / 2000 min	1							
	1000	38,5-40,5	1010							
	A 30 I	PS / 2000 min-	1							
	1000	39,5-41,5	1010							
	B 30 I	PS / 1800 min-	1							
	900	38,5-40,5	910							
	A 27 I	PS / 1800 min-	1							
	900	38,5-40,5	910							
	B 24 I	PS / 1500 min	1							
	750	37,5-39,5	760							



760

A 22,5 PS / 1500 min⁻¹

38,0-40,0

750

1

C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load o Control-ro Test oil tei	telivery	Rotational-speed limitation	Fuel dela	very characteristics	Starting Idle switching	fuel delivery	Intermediate rotational speed Torque-control	
rev/min	cm ⁹ 1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 62 PS / 3000 min-1								•

F 62 PS / 3000 min⁻¹

1500 46,0-48,0

1520

B 60 PS / 3000 min⁻¹

1500 44,5-46,5

1/520

A 56 PS / 3000 min-1

1500 45,5-47,5

1520

F 60 PS / 2800 min⁻⁷

1400 46,0-48,0

1420

B 58 PS / 2800 min-1

1400 44,0-46,0

1420

A 54 PS / 2800 min-1

1400 46,0-48,0

1420

F 58 PS / 2600 min-1

1300 46,0-48,0

1320

B 56 PS / 2600 min-1

1300

44,5-46,5

1320

A 52 PS / 2600 min-1

1300

45,5-47,5

1320

F 56 PS / 2500 min-1

1250

46,0-48,0

1270

B 54 PS / 2500 min-1

1250

43,5-45,5

1270

A 50 PS / 2500 min⁻¹

1250

44,5 - 46,5

1270

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col 2

engine po Full-load d Control-ro Test oil ter	elivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery	Intermed rotationa Torque- travei	speed
rev/min	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 54 P	S / 2400 min-	<u> </u>	•	•	•	•		•
1200	44,5-46,5	1220						
B 52 P	S / 2400 min-	1						
1200	43,0-45,0	1220						
	S / 2400 min							
1200	44,0-46,0	1220						
	S / 2300 min	-						
1150	42,5-44,5	1170						
B 50 P	S / 2300 min-	1						
1150	41,0-43,0	1170						
A 46 P	S / 2300 min	1		**************************************				
1150	42,0-44,0	1170						
F 50 P	S / 2200 min-	1						
1100	42,0-44,0	1120						
B 48 P	S / 2200 min ⁻	1						
1100	40,0-42,0	1120						
A 44 P	PS / 2200 min	1						
1100	41,0-43,0	1120						,
F 48 P	PS / 2100 min-	1						
1050	40,0-42,0	1060						
B 46 P	PS / 2100 min ⁻	1						
1050	38,5-40,5	1060						
A 42 P	os / 2100 min ⁻	1						
	_							

Testoil-ISO 4113

1060

Checking values in brackets

1050

39,0-41,0

* 1 mm less control rod travel than col. 2

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery lidle switching point		Intermediate rotational speed Torque-control	
rev/min cm ³ 1000 strokes		rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	travel rev/min 8	mm
 		 	 `				-	

F 46	PS / 2000 min ⁻¹ 40,5-42,5	1010	•		ı	•	•
B 44	PS / 2000 min-1						
1000	38,5-40,5	1010					
A 40	PS / 2000 min-1					**	
1000	39,0-41,0	1010					
B 40	PS / 1800 min-1						
900	38,5-40,5	910					
A 36	PS / 1800 min-1						
900	38,0-40,0	910					
B 32	PS / 1500 min ⁻¹						
750	36,5-38,5	760					
A 30	PS / 1500 min ⁻¹						
750	38,5-40,5	760					

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation			Starting fuel delivery ldle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	tea/wiu	l ww
1	2	3	4	5	6	7	8	
F 93	' PS / 3000 min	-1	, .	1	, – –			

rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	[mm
1	2	3	4	5	6	7	8	
F 93	PS / 3000 min	<u>1</u>	•	•	•	•	•	•
1500	45,0-47,0	1520						
B 90	PS / 3000 min	1			· 			
1500	43,5-45,5	1520						
A 84	PS / 3000 min	1						
1400	44,5-46,5	1520						
F 90	PS / 2800 min-	1						
1400	45,5-47,5	1420						
B 87	PS / 2800 min	1	-					
1400	44,0-46,0	1420						
A 81	PS / 2800 min	1			***************************************			
1400	45,0-47,0	1420						
F 87	PS / 2600 min	1						
1300	45,5-47,5	1320						
B 84	PS / 2600 min-	1						
1300	44,0-46,0	1320						
A 78	PS / 2600 min	1						
1300	45,5-47,5	1320						
F 84	PS / 2500 min	1						
1250	45,0-47,0	1270						
B 81	PS / 2500 min-	1						77
1250	43,0-45,0	1270						٠
A 75	PS / 2500 min-	1						
1250	44,0-46,0	1270						

0

C. Settings for Fuel Injection Pump with Fitted Governor

	·	, ————————————————————————————————————						
engine po Full-load d Control-rod Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery ng point	Intermed rotationa Torque- travel	speed
rev/min	cm ³ 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strakes	rev/min	[mm
1	2	3	4	5	6	7	8	
F 81 P	S / 2400 min ⁻¹		1				1	,
1200	44,0-46,0	1220						
B 78 P	S / 2400 min ⁻¹	-						
1200	42,5-44,5	1220						
A 72 P	S / 2400 min-1							
1200	43,5-45,5	1220						
F 78 P	S / 2300 min ⁻¹			**************************************				
1150	42,5-44,5	1170						
B 75 P	S / 2300 min ⁻¹							
1150	41,0-43,0	1170						
A 69 P	S / 2300 min ⁻¹							
1150	41,5-43,5	1170						
F 75 P	S / 2200 min ⁻¹							
1100	41,0-43,0	1120						
B 72 P	S / 2200 min-1							
1100	39,5-41,5	1120						
A 66 PS	S / 2200 min-1						*******	
1100	40,0-42,0	1120						•
F 72 PS	S / 2100 min-1							
1050	40,0-42,0	1060						
B 69 PS	S / 2100 min ⁻¹			· · · · · · · · · · · · · · · · · · ·				
1050	38,0-40,0	1060						
A 63 PS	S / 2100 min ⁻¹						 	
1050	39,0-41,0	1060						

Testoil-ISO 4113

Checking values in brackets

* 1 mm less control rod travel than col. 2

E14

engine p Full-load Control-re Test Sil te	delivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery	Intermed rotationa Torque-c travel	speed
rev/min	cm ² 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		l ww
1	2	3	4	5	6	7	8	
F 69	PS / 2000 min	'1	•	•	•		•	•
1000	39,5-41,5	1010						
B 66	PS / 2000 min ⁻	1						
1000	38,0-40,0	1010						
A 60	PS / 2000 min-	1		**************************************				
1000	38,0-40,0	1010						
B 60	PS / 1800 min-	1						
900	36,5-38,5	910						
A 54	PS / 1800 min-	1						
900	38,0-40,0	910						
B 48	PS / 1500 min ⁻	1						
750	36,5-38,5	760						
A 45	PS / 1500 min ⁻	1						
750	38,0-40,0	760						

engine po Full-load o Control-ro Test oil te	lelivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchir	fuel delivery ng point	Intermed rotationa Torque- travel	Ispeed
rev/min	cm ³ 1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	<u> </u>
F 46,	5 PS / 3000 mi	n-1	•			•		
1500	49,5-51,5	1520						
B 45 I	PS / 3000 min-	1			·····			·· <u>·····</u>
1500	48,5-50,5	1520						
A 42 1	PS / 3000 min ⁻	1	<u> </u>		······			· · · · · · · · · · · · · · · · · · ·
1500	48,5-50,5	1520						
F 45	PS / 2800 min	1			·····			
1400	50,0-52,0	1420						
B 43,	5 PS / 2800 mi	in-1						
1400	49,0-51,0	1420						
A 40,	5 PS / 2800 mi	in-1						
1400	49,0-51,0	1420						
F 43,	5 PS / 2600 mi	in-1						
1300	49,0-51,0	1320						
B 42	PS / 2600 min	·1						
1300	47,5-49,5	1320						
A 39	PS / 2600 min ⁻	-1						
1300	48,5-50,5	1320						
F 42	PS / 2500 min	-1						
1250	48,5-50,5	1270						
В 40,	5 PS / 2500 m	in ⁻¹						
1250	47,0-49,0	1270						
A 37,	5 PS / 2500 m	in ⁻¹					-	
1250	48,0-50,0	1270						

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	peed Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control	
rev/min	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/mm	cm ³ /1000 strokes	rev/min mm	
1	2	3	4	5	6	7	8	

1200 47,5-49,5 1220

B 39 PS / 2400 min⁻¹
1200 46,5-48,5 1220

A 36 PS / 2400 min-1

47,5-49,5

1200

1220

F 39 PS / 2300 min⁻¹

1150 47,0-49,0 1170

B 37,5 PS / 2300 min⁻¹

1150 45,5-47,5

1170

A 34,5 PS / 2300 min⁻¹

1150 47,0-49,0

1170

F 37,5 PS / 2200 min⁻¹

1100 46,5-48,5

1120

B 36 PS / 2200 min⁻¹

1100 45,0-47,0

1120

A 33 PS / 2200 min⁻¹

1100 46,0-48,0

1120

F 36 PS / 2100 min-1

1050 45,5-47,5

1060

B 34,5 PS / 2100 min⁻¹

1050 44,0-46,0

1060

A 31,5 PS / 2100 min-1

1050 45,5-47,5

1060

engine po Full-load d Control-ro Test oil ter	elivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchir	fuel-delivery ng point	intermed rotationa Torque-	speed
rev/man	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	i ww
1	2	3	4	5	6	7	8	
F 34,	, 5 PS / 2000 mi	' n-1	1	ı	' •	1	•	•
1000	44,5-46,5	1010						
B 33 I	PS / 2000 min	1						
1000	43,5-45,5	1010						•
A 30 I	PS / 2000 min	1						
1000	44,5-46,5	1010						•
B 30 I	PS / 1800 min	1						
900	42,0-44,0	910						
A 27 I	PS / 1800 min	1						

A 22,5 / 1500 min⁻¹
750 43,0-45,0

44,0-46,0

900

760

910

engine Full-load Control- Test oil t	l gelivery	Rotational-speed timitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery	Intermed rotationa Torque- travel	I speed
rev/min	cm ³ /1000 strokes	rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	mm
<u> </u>	PS / 2000 ======		 	3	 		 	
1500	PS / 3000 min ⁻ 46,5-48,5	<u>'</u> 1520						
B 60	PS / 3000 min ⁻	1						
1500	45,0-47,0	1520						
A 56	PS / 3000 min-	1						
1500	45,0-47,0	1520						
	PS / 2800 min-							
1400	47,0-49,0	1420						
	PS / 2800 min-	-					· ·	
1400	45,0-47,0	1420						
	PS / 2800 min ⁻	1						
1400	45,5-47,5	1420						
F 58	PS / 2600 min ⁻	1						
1300	46,0-48,0	1320		•			-	
B 56	PS / 2600 min	1					*************************************	
1300	44,0-46,0	1320					_	
	PS / 2600 min ⁻	1						
1300	45,0-47,0	1320						
	PS / 2500 min-	1						
1250	45,0-47,0	1270						
	PS / 2500 min	1						
1250	43,5-45,5	1270						
	PS / 2500 min-							
1250	44,5-46,5	1270						

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine p Full-load (Control-re Test oil te	delivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchin	fuel delivery	intermed rotationa Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	
F 54 F	S / 2400 min ⁻¹		•	•	·			
1200	44,5-46,5	1220						
B 52 F	PS / 2400 min ⁻¹							
1200	43,0-45,0	1220						
A 48 F	S / 2400 min ⁻¹		-					
1200	44,0-46,0	1220						
F 52 F	PS / 2300 min ⁻¹							
1150	43,5-45,5	1170						
B 50 F	PS / 2300 min ⁻¹	<u> </u>						
1150	42,0-44,0	1170						
A 46 F	PS / 2300 min ⁻¹							
1150	43,5-45,5	1170						
F 50 F	PS / 2200 min-1				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
1100	43,0-45,0	1120						
B 48 F	PS / 2200 min ⁻¹				···		···	
1100	41,0-43,0	1120						
A 44 F	PS / 2200 min ⁻¹							
1100	42,5-44,5	1120						
F 48 I	PS / 2100 min ⁻¹	<u> </u>						
1050	42,0-44,0	1060						
B 46 I	PS / 2100 min ⁻¹	<u></u>						
1050	40,5-42,5	1060						
A 42 I	PS / 2100 min ⁻¹]						
1050	41,5-43,5	1060						

1010

engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	peed Fuel delivery characteristics		Starting Idle switchir	fuel delivery ig point	intermediate rotational speed Torque-control travel	
rev/min	cm ² 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		lww
1	2	3	4	5	6	7	8	
F 46	PS / 2000 min ⁻ 41,5-43,5	1010	•	•		•		,
B 44 1000	PS / 2000 min ⁻ 40,0-42,0	1010						
A 40	PS / 2000 min ⁻	·1						

				
B 40 P	S / 1800 min ⁻¹			
900	38.0-40.0	910		·

A 36	PS / 1800 min ⁻¹				
900	40,0-42,0	910			
• • • •	20 / 4500 1 1		 	 	

750 39,5-41,5 760	min-1	/ 1500 min ⁻¹	<u>in-1</u>
	,5	9,5-41,5	760



1000

41,0-43,0

0

C. Settings for Fuel Injection Pump with Fitted Governor

engine p Full-load (Control-ri Test oil te	delivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchin	fuel delivery	intermed rolationa Torque- travel	speed
rev/min	cm ³ 71000 strokes	rev/min	7ev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	l uu uu
1	2	3	4 \	5	6	7	8	
- 00		.1	•	•	•	•		•
	PS / 3000 min	-dima-						
1500	46,0-48,0	1520						
D 00 I	PS / 3000 min ⁻	 ·1	·					·
								
1500	44,5-46,5	1520						
A 84	PS / 3000 min	·1						
1500	44,5-46,5	 1520						
1500	44,3-40,5	1320						
F 90	PS / 2800 min	·1						
1400	46,5-48,5	 1420						
B 87	PS / 2800 min	-1						
1400	44,5-46,5	1420						
								
A 81	PS / 2800 min [*]	<u>-1</u>						
1400	45,0-47,0	1420						
F 87	PS / 2600 min	- <u>1</u>						

B 84 PS / 2600 min ⁻¹				
1300 44,0-46,0	1320			
A 78 PS / 2600 min ⁻¹				

1300 44,5-46,5 1320	
A 78 PS / 2600 min-1	

F 84 PS / 2500 min ⁻¹		
1250 45,0-47,0	1270	
B 81 PS / 2500 min-1		
1250 43,0-45,0	1270	•

A 75 P	S / 2500 min-1	
	44,0-46,0	1270

engine g Full-load Control-r Test oil to	delivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery ig point	Intermed rotationa Torque- travel	l speed
rev/min	cm ² 71000 strokes	rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	mm
F 81	PS / 2400 min ⁻			-	 		+	
1200	44,0-46,0	<u> </u>						
B 78 1200	PS / 2400 min ⁻ 42,5-44,5	<u>1</u> 1220						
A 72 1200	PS / 2400 min ⁻ 43,5-45,5	1220						
F 78	PS / 2300 min ⁻	1					<u> </u>	
1150	43,5-45,5	1170						
B 75 1150	PS / 2300 min ⁻ 41,5-43,5	<u>1</u> 1170						
A 69	PS / 2300 min ⁻ 42,5-44,5	1170						
	PS / 2200 min ⁻							
1100	42,5-44,5	1120						
B 72 1100	PS / 2200 min ⁻ 41,0-43,0	1120						
A 66 1100	PS / 2200 min ⁻ 42,0-44,0	1120						
F 72	PS / 2100 min ⁻ 41,5-43,5	1070						
B 69 1050	PS / 2100 min ⁻ 40,0-42,0	1070						
A 63 1050	PS / 2100 min ⁻ 41,0-43,0	1070						

1	limitation		ldle				ate spead control
rev/min cm ³ /1000 strokes re	ev/min	rev/min 4	cm ^{\$} /1000 strokes 5	rev/min	cm ³ /1 000 s trokes	travel rev/min 8	mm

F 69 PS / 2000 min-1 1000 41,0-43,0 1010 B 66 PS / 2000 min-1 39,5-41,5 1000 1010 A 60 PS / 2000 min-1 1000 40,5-42,5 1010 B 60 PS / 1800 min-1 900 38,0-40,0 910 A 54 PS / 1800 min⁻¹ 900 40,0-42,0 910 $A_{45} PS / 1500 min^{-1}$ 750 38,5-40,5 760

Festoil-ISO 41

Test Specifications Fuel Injection Pumps WPP 001/4 MWM 1,5 c

4. Edition

supersedes

company:

engine:

7.77

D 208 -

D 308 -

D 225 -

D 325 -

D 226

D 327

2.6

MWM

En

PES 2 A 75D..RS1235,1252,1298 EP/RSV 300-1000A7B505DR 80 ..RS1236,1239,1299

..RS1237,1246,1276,1301

and Governors

..RS1238,1302 EP/RSV 325-1500 A2B505DR

As from FD 823 the idle auxiliary-spring has been changed from 1 424 641 000 to ... 001. New values enclosed.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

4.0.0	3 7,5 Ø	4	2	cm ³ /100 strokes 3 8 Ø	mm 6
1000 12	6,2-6,6	0,4	9	4,1-4,5	
9	3,2-3,7		6	1,2-2,0	
200 9	2,1-2,8		9	2,7-3,7	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

300-1000

Upper	rated speed		Intermediate	ed	4 Lowe	r rated spe	eed	3 Torque control		
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1000 1050	16,0 8,5	withou	+		ca.28		5,5	-	_
	1100	2,4	withou spring		Hary		100 300	19 - 21 5,7-6,3		
€a.67 ⑤	1030 1070 1120	8,0-9,0 2,0-4,0 0,3-1,0	with auxiliary spring				450	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop					Starting Idle	Starting fuel delivery Idle		5a Idle stop	
Test oil temp rev/min 1	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
Page 3	- 33!								

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.79

B. Governor Settings

325-1500

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.58	1500 1580 1630	16,0 9,0 4,2	witho sprin	ut aux	ciliar	ca.20	325 100	5,5 19 - 21	-	-
ca.56	1530 1580 1620	8,0-9,0 3,0-4,0 0,3-1,0] '	auxili	iary		325 420 520	5,7-6,3 1,4-3,4 0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load stop Test oil temp. 40°C (104°F)		Rotational- speed limitat.	39 Ft	ael delivery paracteristics	fuel delivery 5 48 Idle stop				
rev/min	cm ³ /1000 strokes 2	changed to)	changed to)	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm
Page	3 - 33!								

Checking values in brackets

* 1 mm less control rod travel than col. 2

The nameplate described at MWM 1.5 a has recently been extended to 2 speeds and 2 deliveries - in column n = (speed) and Q = (full-load delivery) for more accurate setting in the case of governors with torque control.

The following points apply, deviating from WPP 001/4, Supplement 1, setting the governor and the pump:

- (2) Setting according to nameplate n = (speed 1) and Q = (delivery 1); or according to columns 1 and 2
- (3) Is contacted until change of control-rod travel, as read under (2), or (with new nameplate) until the 2 delivery is reached at speed 2; or according to columns 4 and 5
- (6) Is adjusted according to nameplate n = (speed 1 + 20 rpm) or column 3

For repairs on Fendt tractors on which the new nameplate (with 2 speeds and 2 deliveries) has not yet been introduced, the full-load data apply - ordered according to engine types -

according to the above note

In the case of new replacement pumps from Stuttgart warehouse there is no spring retainer. Send for from MWM according to old nameplate!

Full-load data for Fendt tractor vehicles D 208/308

PES 3 A 75 C 320/3 RS 1236 a. 39 only valid for engines with pumps PES 4 A 75 C 320/3 RS 1237

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting Idle switchir	fuel delivery g point	Intermediate rotational speed Torque-control trayel		
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm	
1	2	3	4	5	6	7	8		
Fendt	tractors- Out	out at speed	' - Eng	ine and tract	or ty	pe		•	
32 PS	/ 2100 min ⁻¹	D 208 - 3	- Far	mer 2 D -					
1050	36,0-37,0	1070	700	39,0-41,0					
32 PS	/ 1050 min ⁻¹	D 308 - 3	- 231	GT -					
975	36,0-37,0	990	700	39,0-41,0					
38 PS	/ 2600 min-1	D 208 - 3	- Far	mer 2 -					
1300	35,0-36,0	1320	700	36,0-38,0					
55 PS	/ 2400 min ⁻¹	D 208 - 4	- Far	mer 4 S -					
1200	41,0-42,0	1220	700	42,0-44,0					
D 208		· ·	d						
F 31 P	S / 3000 min-	<u> </u>							
1500	41,5-43,5	1520							
B 30 P	S / 3000 min-	1							
1500	39,5-41,5	1520							
A 28 P	S / 3000 min-								
1500	41,5-43,5	1520							
F 30 P	S / 2800 min ⁻¹	 - -		·				•	
1400	41,5-43,5	1420							
B 29 P	S / 2800 min ⁻¹								
1400	40,0-42,0	1420							
A 27 P	S / 2800 min ⁻¹	<u> </u>							
1406	41,5-43,5	1420						•	

Testoil-ISO 4113

En /18

engine power Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery Idle switching point		intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm
1	2	3	4	5	6	7	8	

rev/min	cm ⁹ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	Len/win	mm	
1	2	3	4	5	6	7	8	<u> </u>	1
F 29	PS / 2600 min-	<u>.</u>	•	•		•			
1300	43,0-45,0	1320							
	PS / 2600 min ⁻	1							-
1300	41,0-43,0	1320							
A 26	PS / 2600 min-	1							_
1300	42,5-44,5	1320							
F 28	PS / 2500 min-	1							
1250	42,5-44,5	1270							
B 27	PS / 2500 min-	1	_						
1250	40,5-42,5	1270							
A 25	PS / 2500 min ⁻	1							
1250	41,5-43,5	1270							
F 27	PS / 2400 min-	1						· · · · · · · · · · · · · · · · · · ·	
1200	42,0-44,0	1220							
B 26	PS / 2400 min ⁻	1							
1200	40,0-42,0	1220							
A 24	/ 2400 min ⁻¹								
1200	41,0-43,0	1220							
F 26	PS / 2300 min ⁻	1							
1150	41,5-43,5	1170							
B 25	PS / 2300 min ⁻	1							
1150	39,5-41,5	1170							٠.
A 23	PS / 2300 min ⁻	1							
1150	40,5-42,5	1170							

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting fuel delivery idle switching point		intermediate rotational speed Torque-control travei	
rev/min	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes		cm ³ /1000 strokes	rev/min	mm
	2	3	4	5	6	7	8	-
F 25	PS / 2200 min ⁻	<u>1</u>						
1100	41,0-43,0	1120					_	
B 24	PS / 2200 min ⁻	1						
1100	39,0-41,0	1120						
A 22	PS / 2200 min ⁻	1						
1100	40,0-42,0	1120		,				
F 24	PS / 2100 min ⁻	1		<u> </u>				
1050	40,5-42,5	1060						
B 23	PS / 2100 min ⁻	1						
1050	38,0-40,0	1060						
A 21	PS / 2100 min ⁻	1						
1050	39,0-41,0	1060						
F 23	PS / 2000 min ⁻	1						
1000	39,0-41,0	1010						
B 22	PS / 2000 min ⁻	1						
1000	37,0-39,0	1010						
A 20	PS / 2000 min ⁻	1						•
1000	38,0-40,0	1010				•		
B 20	PS / 1800 min ⁻	1				**************************************		
900	36,0-38,0	910						
A 18	PS / 1800 min ⁻	1						
900	36,5-38,5	910						
B 16	PS / 1500 min ⁻	1						
750	34,0-36,0	760						

engine po Full-load di Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchin	fuel delivery	Intermedi rotational Torque-6	speed
rev/min	cm ² 1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	travel rev/min 8	mm

A 15 PS / 1500 min-1

750 36,0-38,0

760



engine po	delivery	Rotational-speed	Fuel deli	very characteristics	Starting	fuel delivery	Intermed	
Control-ro	nd stop mp 40°C (104°F)	limitation		1	idle switchir	•	rotationa Torque-	i speed control
rev/min	cm ³ 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	travel rev/min	l mm
1	2	3	4	5	6	7	8	
F 46,	5 PS / 3000 mir	n-1	•	•	,	•	•	•
1500	42,0-44,0	1520						
B 45	PS / 3000 min ⁻¹	1						
1500	39,0-41,0	1520						
A 42	PS / 3000 min ⁻¹	1						
1500	40,5-42,5	1520						
F 45	PS / 2800 min ⁻¹	<u> </u>						
1400	42,0-44,0	1420						
B 43,	5 PS / 2800 mir	₁ -1						· · · · · · · · · · · · · · · · · · ·
1400	39,0-41,0	1420						
A 40,	5 PS / 2800 mir	₁ -1						
1400	40,0-42,0	1420						
F 43,	5 PS / 2600 mir	₁ -1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
1300	41,5-43,5	1320						
B 42 I	PS / 2600 min ⁻¹			***************************************				
1300	39,5-41,5	1320						
A 39	PS / 2600 min-1]						·
1300	40,0-42,0	1320						·
F 42 I	PS / 2500 min ⁻¹	 -						
1250	40,5-42,5	1270						
B 40,	5 PS / 2500 mir	₁ -1 ·						
1250	38,5-40,5	1270						
A 37,	5 PS / 2500 mir	₁ -1						
1250	39,5-41,5	1270						

engine p Full-load Control-r Test oil te	delivery	Rotational-speed limitation	Fuel deliv	rery characteristics	Starting Idle switchir	fuel delivery ng point	Intermed rotationa Torque- travel	speed
rev/min	cm ³ 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	i i	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 40,	5 PS / 2400 mi	<u>n-1</u>						
1200	40,5-42,5	1220						
B 39	PS / 2400 min	1						
1200	38,5-40,5	1220						
	PS / 2400 min	1						
1200	39,5-41,5	1220						
F 39	PS / 2300 min	1						
1150	39,5-41,5	1170						
В 37,	5 PS / 2300 mi	n-1						
1150	38,0-40,0	1170						
A 34,	,5 PS / 2300 mi	in-1					_ ,	
1150	38,0-40,0	1170						
F 37,	,5 PS / 2200 mi	in-1						
1100	38,5-40,5	1120						
B 36	PS / 2200 min	·1						
1100	36,5-38,5	1120						
A 33	PS / 2200 min	· <u>1</u>			 			
1100	38,0-40,0	1120						
F 36	PS / 2100 min	-1						
1050	38,0-40,0	1060						
B 34	,5 PS / 2100 m	in ⁻¹						
1050	36,0-38,0	1060						
A 31	,5 PS / 2100 m	in ⁻¹			· · · · · · · · · · · · · · · · · · ·			
1050	36,0-38,0	1060						

0

					_			
engine po Full-load o Control-ro Test oil ter	jelivery	Rotational-speed limitation	Fuel deli	very characteristics	Idle	fuel delivery	Intermed rotationa Torque- travel	l speed
rev/min	cm ³ 1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	lww
1	2	3	4	5	6	7	8	
F 34.	' 5 PS / 2000 mi	n ⁻ 1	1	1	•	•	•	•
1000	37,0-39,0	1010						
B 33	PS / 2000 min ⁻	1						
1000	35,5-37,5	1010						
A 30 I	PS / 2000 min ⁻	1						
1000	37,0-39,0	1010						
B 30 I	PS / 1800 min ⁻	1						
900	34,0-36,0	910						
A 27 I	PS / 1800 min-	1						
900	35,0-37,0	910						
B 24 I	PS / 1500 min ⁻	1						
750	33,0-35,0	760						
A 22,	5 PS / 1500 mi	<u>n-1</u>						
750	36,0-38,0	760						

engine (
Full-load Control- Test oil t		Rotational-speed limitation	Fuel dela	very characteristics	Starting Idle switchin	fuel delivery ng point	Intermed rotationa Torque- travel	speed
rev/min 1	cm ³ 71000 strokes	rev/min	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min 8	nım
F 62	PS / 3000 min ⁻	1		1	•	•	•	•
1500	40,5-42,5	1520						
B 60	PS / 3000 min-	1						
1500	39,0-41,0	1520						
A 56	PS / 3000 min	1						
1500	40,0-42,0	1520						
F 60	PS / 2800 min-	1						
1400	40,0-42,0	1420						
B 58	PS / 2800 min	1		· 				
1400	35,5-37,5	1420						
A 54	PS / 2800 min-	1						
1400	40,0-42,0	1420						
F 58	PS / 2600 min	1					,, , , , , , , , , , , , , , , , , , ,	·
1300	40,0-42,0	1320						
B 56	PS / 2600 min	1						•
1300	38,0-40,0	1320						
A 52	PS / 2600 min ⁻	1						
1300	39,0-41,0	1320						••
F 56	PS / 2500 min ⁻	1	***************************************					
1250	39,0-41,0	1270						
B 54	PS / 2500 min-	1		· 	· · · · · · · · · · · · · · · · · · ·			
1250	37,5-39,5	1270						
A 50	PS / 2500 min	1			<u>-</u>			
1250		1270						
		· · · · · · · · · · · · · · · · · · ·					···	

engine po Full-load de Control-rod Test oil ten	Blivery	Rotational-speed limitation	Fuel defin	very characteristics	Starting Idle switchir		Intermed rotational Torque-c	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ^S /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
-	2	3	+	12	10	 	l°	

rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	mm
1	2	3	<u> -</u>	5	6	7	8	
F 54 P	S / 2400 min ⁻¹	1						
1200	39,0-41,0	1220						
B 52 P	S / 2400 min "							
1200	37,5-39,5	1220						
A 48 P	S / 2400 min ⁻¹	<u> </u>					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
1200	38,0-40,0	1220						
F 52 P	S / 2300 min-1	<u> </u>						
1150	38,0-40,0	1170						
B 50 P	S / 2300 min-	<u> </u>						
1150	36,5-38,5	1170						
A 46 P	S / 2300 min ⁻¹	<u></u> -						
1150	37,5-39,5	1170						
F 50 P	S / 2200 min ⁻ 1							
1100	39,0-41,0	1120						
B 48 P	S / 2200 min ⁻ 1	<u></u> <u> </u>	·					
1100	37,0-39,0	1120						
A 44 P	S / 2200 min-1			 				•
1100	38,0-40,0	1120						
F 48 P	S / 2100 min-1				 		•	
1050	37,5-39,5	1060						
B 46 P	S / 2100 min ⁻¹							
1050	35,5-37,5	1060						
A 42 P	S / 2100 min ⁻¹							· · · · · · · · · · · · · · · · · · ·
1050	36,0-38,0	1060						

		Rotational-speed limitation	Fuel deliv	I delivery characteristics		Starting fuel delivery fidle switching point		eate I speed control
rev/min	cm ⁸ 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	l.	cm ³ /1000 strokes	rev/min	l mm
1	2	3	4	5	6	7	8	
F 46	PS / 2000 min ⁻	1						
1000	38,0-40,0	1010						
B 44	PS / 2000 min ⁻	1						
1000	35,5-37,5	1010						
A 40	PS / 2000 min ⁻	1						
1000	36,0-38,0	1010						
B 40	PS / 1800 min ⁻	1						
900	34,5-36,5	910						
A 36	PS / 1800 min ⁻	1				 		
900	34,0-36,0	910						
B 32	PS / 1500 min-	1					· 	
750	30,5-32,5	760						
A 30	PS / 1500 min-	1	···					
750	33,0-35,0	760						

engine po Full-load o Control-ro Test oil tei	lelivery	Rotational-speed ilmitation	Fuel delin	very characteristics	Starting Idle switchir	fuel delivery	intermed rotationa Torque- travei	al speed
rev/min	cm [®] 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
F 93 F	S / 3000 min	<u>1</u>						
1500	39,5-41,5	1520						
B 90 F	PS / 3000 min	1					Total and the second	
1500	38,0-40,0	1520						
A 84 F	PS / 3000 min ⁻	1		· · · · · · · · · · · · · · · · · · ·				
1500	39,0-41,0	1520						
F 90 I	PS / 2800 min	1						
1400	39,5-41,5	1420						
B 87 I	PS / 2800 min-	1						
1400	38,0-40,0	1420						
A 81 I	PS / 2800 min ⁻	1					 	
1400	39,0-41,0	1420						
F 87	PS / 2600 min ⁻	1						····
1300	39,5-41,5	1320						
B 84	PS / 2600 min ⁻	1						
1300	38,0-40,0	1320						
A 78	PS / 2600 min	1						
1300	38,5-40,5	1320						
F 84	PS / 2500 min ⁻	1				نه فه د سای می او در چی د جود د بود کا د داد سای بروی و دی.		
1250	39,0-41,0	1270						•
B 81	PS / 2500 min ⁻	1						
1250	37,0-39,0	1270						
A 75	PS / 2500 min	·1			 			
1250	38,0-40,0	1270						

engine po Full-load d Control-ro Test oil ter	lelivery	Rotational-speed limitation	Fuel deliv	rery characteristics	Starting Idle switchir	fuel delivery	Intermed rotationa Torque-	speed
rev/min	cm ³ /1000 strokes	rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	travel rev/min 8	mm
F 81 F	25 / 2400 min ⁻ 38,0-40,0	1220						
B 78 F 1200	2S / 2400 min ⁻ 36,5-38,5	1 1220						
A 72 F	2S / 2400 min ⁻ 38,0-40,0	1220						
F 78 F	2S / 2300 min ⁻ 38,0-40,0	1170			ı			
B 75 P	2S / 2300 min ⁻ 36,5-38,5	1 - 1170			:			
A 69 P	2S / 2300 min. 37,0-39,0	1170						
F 75 P	2S / 2200 min ⁻ 38,0-40,0	1120	·				÷	
B 72 P	S / 2200 min ⁻ 36,0-38,0	1 - 1120						
A 66 P	S / 2200 min-6 37,0-39,0	1120						
F 72 P	S / 2100 min ⁻¹ 37,0-39,0	1060						
B 69 P 1050	S / 2100 min ⁻¹ 35,5-37,5	1060						
A 63 P	S / 2100 min-1 36,0-38,0	1060						

engine p Full-load (Control-ro Test oil te	ower delivery od stop mp 40°C (104°F)	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchii	fuel delivery	Intermed rotationa Torque- travel	speed
rev/min	cm ³ 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	16A\W1U	j mm
1	2	3	4	5	6	7 *	8	
F 69	' PS / 2000 min ⁻	1	1					
1000	36,5-38,5	1010						
B 66	PS / 2000 min-	1						· · · · · · · · · · · · · · · · · · ·
1000	34,5-36,5	1010						
A 60	PS / 2000 min	1	· · · · · · · · · · · · · · · · · · ·					
1000	35,0-37,0	1010						
B 60	PS / 1800 min ⁻	1		 		· · · · · · · · · · · · · · · · · · ·		
900	33,5-35,5	910						
A 54	PS / 1800 min ⁻	1						
900	34,0-36,0	910						
B 48	PS / 1500 min ⁻	1						
750	31,0-33,0	760						
A 45	PS / 1500 min ⁻	1						
750	33,0-35,0	760						

Tev/mm Con Tev/	engine po Full-load d Control-ro Test oil ter	elivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switching	fuel delivery	Intermediate rotational speed Torque-control travel		
B 35,5 PS / 3000 min ⁻¹ 1520 800 52,5-55,5 A 32 PS / 3000 min ⁻¹ 1520 800 52,5-55,5 F 41 PS / 2800 min ⁻¹ 1420 800 55,5-58,5 F 38,5 PS / 2500 min ⁻¹ 1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1170 800 52,5-55,5 A 33 PS / 2000 min ⁻¹ 1170 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 52,5-55,5	rev/min	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strakes	1	l mm	
1500 55,0-57,0 1520 800 52,5-55,5 A 32 PS / 3000 min ⁻¹ 1500 51,0-53,0 1520 F 41 PS / 2800 min ⁻¹ 1400 66,5-68,5 1420 800 55,5-58,5 F 38,5 PS / 2500 min ⁻¹ 1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1	2	3	4	5	6	7	8	 	
A 32 PS / 3000 min-1 1500 51,0-53,0 1520 F 41 PS / 2800 min-1 1400 66,5-68,5 1420 800 55,5-58,5 F 38,5 PS / 2500 min-1 1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min-1 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min-1 1250 55,5-57,5 1270 F 36,5 PS / 2300 min-1 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min-1 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min-1 1150 53,0-55,0 1170 F 33 PS / 2000 min-1 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min-1 1000 55,0-57,0 1010 750 52,5-55,5	B 35,5	PS / 3000 min	-1	•	•					
1500 51,0-53,0 1520 F 41 PS / 2800 min ⁻¹ 1400 66,5-68,5 1420 800 55,5-58,5 F 38,5 PS / 2500 min ⁻¹ 1250 62,5-64,5 1270 800 52,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1500	55,0-57,0	1520	800	52,5-55,5					
F 41 PS / 2800 min ⁻¹ 1400 66,5-68,5 1420 800 55,5-58,5 F 38,5 PS / 2500 min ⁻¹ 1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	A 32 P	S / 3000 min-1								
1400 66,5-68,5 1420 800 55,5-58,5 F 38,5 PS / 2500 min ⁻¹ 1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1500	51,0-53,0	1520							
F 38,5 PS / 2500 min ⁻¹ 1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	F 41 P	S / 2800 min ⁻¹								
1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1400	66,5-68,5	1420	800	55,5-58,5					
1250 62,5-64,5 1270 800 55,5-58,5 B 37 PS / 2500 min ⁻¹ 1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	F 38,5	PS / 2500 min	-1	<u></u>			*****			
1250 59,5-61,5 1270 800 52,5-55,5 A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1250	62,5-64,5	1270	800	55,5-58,5		•			
A 34 PS / 2500 min ⁻¹ 1250 55,5-57,5 1270 F 36,5 PS / 2300 min ⁻¹ 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min ⁻¹ 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	B 37 P	S / 2500 min ⁻¹								
1250 55,5-57,5 1270 F 36,5 PS / 2300 min-1 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min-1 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min-1 1150 53,0-55,0 1170 F 33 PS / 2000 min-1 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min-1 1000 55,0-57,0 1010 750 52,5-55,5	1250	59,5-61,5	1270	800	52,5-55,5					
F 36,5 PS / 2300 min-1 1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min-1 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min-1 1150 53,0-55,0 1170 F 33 PS / 2000 min-1 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min-1 1000 55,0-57,0 1010 750 52,5-55,5	A 34 P	S / 2500 min ⁻¹								
1150 60,5-62,5 1170 800 55,5-58,5 B 35 PS / 2300 min-1 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min-1 1150 53,0-55,0 1170 F 33 PS / 2000 min-1 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min-1 1000 55,0-57,0 1010 750 52,5-55,5	1250	55,5-57,5	1270							
B 35 PS / 2300 min-1 1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min-1 1150 53,0-55,0 1170 F 33 PS / 2000 min-1 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min-1 1000 55,0-57,0 1010 750 52,5-55,5	F 36,5	PS / 2300 min	-1							
1150 58,5-60,5 1170 800 52,5-55,5 A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1150	60,5-62,5	1170	800	55,5-58,5					
A 32 PS / 2300 min ⁻¹ 1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	B 35 P	S / 2300 min-1								
1150 53,0-55,0 1170 F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1150	58,5-60,5	1170	800	52,5-55,5					
F 33 PS / 2000 min ⁻¹ 1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	A 32 P	S / 2300 min ⁻¹	_							
1000 58,5-60,5 1010 750 55,0-58,0 B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	1150	53,0-55,0	1170							
B 31 PS / 2000 min ⁻¹ 1000 55,0-57,0 1010 750 52,5-55,5	F 33 P	S / 2000 min ⁻¹	-							
1000 55,0-57,0 1010 750 52,5-55,5	1000	58,5-60,5	1010	750	55,0-58,0					
	B 31 P	S / 2000 min ⁻¹	-				· · · · · · · · · · · · · · · · · · ·			
A 28 5 PS / 2000 min-1	1000	55,0-57,0	1010	750	52,5-55,5					
A 20,0 13 / 2000 IRTH 7	A 28,5	PS / 2000 mir	1-1							
1000 50,0-52,0 1010	1000	50,0-52,0	1010							

engine p Full-load Control-re Test oil te	delivery	Rotational-speed limitation	Fuel deli	livery characteristics Starting fuel delivery lidle switching point		•	Intermediate rotational speed Torque-control travel	
rev/min	cm ² 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min mm	
1	2	3	4	5	6	7	8	<u> </u>
B 28,	5 PS / 1800 m	in ⁻¹	•	•	•	•	•	•
900	52,5-54,5	910	750	52,0-55,0				
			······································					•
A 26	<u>PS / 1800 min</u>	- 						
900	48,0-50,0	910						
B 24	PS / 1500 min	-1	· · · · · · ·					
750	46,5-48,5	760	750	50,5-53,5				
A 22	PS / 1500 min	-1						
750	51,0-53,0	760						

engine p Full-load (Control-re Test oil te	delivery	Rotational-speed fimitation	Fuel deliv	very characteristics	idle	fuel delivery	Intermed rotations Torque	speed
rev/min	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	travel rev/min	mm
1	2	3	4	5	6	7	8	
R 53 I	PS / 3000 min ⁻	1	•	•		•		
1500	54,5-56,5	_ 1520	800	51,0-54,0				
				01,0 01,0				***************************************
A 48 I	PS / 3000 min-	<u>1</u>						
1500	50,5-52,5	1520						
F 62 I	PS / 2800 min	1						
1400	66,5-68,5	1420	800	54,0-57,0				
				,,-				
	PS / 2500 min-	-						
1250	62,5-64,5	1270	800	54,0-57,0				
B 56 I	PS / 2500 min ⁻	1					· · · · · · · · ·	
1250	59,5-61,5	- 1270	800	51,0-54,0				
·· · · · · · · · · · · · · · · · ·							· · · · · · · · · · · · · · · · · · ·	
	PS / 2500 min-							
1250	54,5-56,5	1270						
F 55 I	PS / 2300 min-	1			V - L 			
1150	58,5-60,5	 1170	800	54,0-57,0				
								
	PS / 2300 min	_						
1150	57,5-59,5	1170	800	51,0-54,0				
A 48 I	PS / 2300 min	1						
1150	51,5-53,5	- 1170						
		11/0						
F 49,	5 PS / 2000 mi	<u>n-1</u>						-
1000	57,5-59,5	1010	750	54,0-57.,0				
B 46.4	5 PS / 2000 min	n-1						
1000	53,5-55,5	1010	750	51,0-54,0				
	,,-							
	PS / 2000 min-	<u>1</u>						
1000	48,5-50,5	1010						

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel delivery characteristics		Starting Idle switchir	fuel delivery	Intermediate rotational speed Torque-contro travel	
rev/min	cm ³ /1000 strokes	rev/min	rav/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	l mm
1	2	3	4	5	6	7	8	<u> </u>
B 43 P	s / 1800 min ⁻¹	<u>i</u>	•	f	•	•	•	•
900	52,5-54,5	910	750	52,0-55,0				
A 39 P	S / 1800 min ⁻¹	<u> </u> -						
900	47,5-49,5	910						
B 36 P	PS / 1500 min ⁻¹							
		-	650	40 0 50 0				
750								
750	49,5-51,5	760	650	49,0-52,0				
	49,5-51,5 PS / 1500 min ⁻¹		650	49,0-52,0		 		

Control-	power I delivery rod stop lemp 40°C (104°F)	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchir	fuel delivery	Intermed rotationa Torque-	speed
rev/min	cm ² /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1	cm ³ /1000 strokes	travel rev/min	mm
1	2	3	4	5	6	7	8	
B 71	PS / 3000 min-	1						
1500	54,5-56,5	1520	800	62,0-65,0				
A 64	PS / 3000 min-	1						
1500	49,5-51,5	1520						
F 83	PS / 2800 min	1					 "	
1400	65,5-67,5	1420	800	63,0-66,0				
F 78	PS / 2500 min	1						
1250	61,5-63,5	1270	800	50,0-53,0				
B 74	,5 PS / 2500 mi	n-1						
1250	58,5-60,5	1270	800	50,0-53,0				
A 68	PS / 2500 min	1				**************************************		
1250	53,5-55,5	1270						
F 73	PS / 2300 min-	1						
1150	60,5-62,5	1170	800	52,0-55,0				
B 71	PS / 2300 min	1					·	
1150	58,5-60,5	1170	800	50,0-53,0				
A 64	PS / 2300 min	1		and the section of th				
1150	51,5-53,5	1170						•
F 66	PS / 2000 min	1						** 7
1000	57,5-59,5	1010	750	52,0-55,0				
B 62,	,5 PS / 2000 mi	n-1						
1000	53,5-55,5	1010	750	50,0-53,0				
A 57	PS / 2000 min	1		<u> </u>				
	48,5-50,5	1010						

Testoil-ISO 4113

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C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load o Control-ro Test oil te	telivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchir	tuel delivery	Intermed rotationa Torque-c	speed
rev/min	cm [®] 71000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	l ww
1	2	3	4	5	6	7	8	
в 57 Р	S / 1800 min-	<u>.</u>	•	•	·	•		
900	51,5-53,5	910	750	49,0-52,0				
A 52 P	S / 1800 min	<u> </u>	· 					
900	45,5-47,5	910						
B 48 P	S / 1500 min ⁻							
750	48,5-50,5	760	650	47,0-50,0				
A 44 P	S / 1500 min	<u> </u>					 	
750	45,5-47,5	760						

Testoil-ISO 4113

engine po Full-load d Control-ro Test oil ter	elivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery g point	Intermed rotationa Torque- travel	l speed
rev/min	cm ² 71000 strokes	rev/min	rev/min	cm ^S /1000 strokes	rev/min	cm ³ /1000 strokes		mm
1	2	3	4	5	6	7	8	<u> </u>
B 106 1500	PS / 3000 min 55,5-57,5	- <u>1</u> 1520	800	50,0-53,0	•	•		•
	'S / 3000 min-	-						
1500	49,5-51,5	1520						
	PS / 2800 min		000	F4 0 F7 0	•			
1400	66,5-68,5	1420	800	54,0-57,0				
	PS / 2500 min							
1250	61,5-63,5	1270	800	54,0-57,0				
B 112	PS / 2500 min	-1		The second section is the second section in the second section in the second section is the second section in	·			
1250	58,5-60,5	1270	800	50,0-53,0				
A 102	PS / 2500 min	-1	 					
1250	53,5-55,5	1270	•					
F 110	PS / 2300 min	-1						
1150	59,5-61,5	1170	800	54,0-57,0				
B 106	PS / 2300 min	-1						
1150	56,5-58,5	1170	800	50,0-53,0				
A 96 P	S / 2300 min-	1						
1150	51,5-53,5	1170						
F 99 P	S / 2000 min-	1						
1000	56,5-58,5	1010	750	54,0-57,0				
B 94 P	S / 2000 min	1						
1000	53,5-55,5	1010	750	50,0-53,0				
A 86 P	S / 2000 min-	1						
1000	47,5-49,5	1010				•		

engine por Full-toad de Control-rod Test oil tem	elivery	Rotational-speed Fuel limitation		very characteristics	Idle	Starting fuel delivery Idle switching point		iate I speed control
rev/min	cm ⁵ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ⁹ /1000 strokes	travel rev/min	mm
1	2	3	4	5	6	7	8	
B 86 P	S / 1800 min-	1	•	•	•	•	•	•
900	49,5-51,5	910	750	53,0-56,0				
A 78 P	S / 1800 min ⁻	1						
900	46,5-48,5	910						
B 72 P	S / 1500 min ⁻	1 -					- 	
750	49,5-51,5	760	650	47,0-50,0				
A 66 P	S / 1500 min ⁻	 -						
750	45,5-47,5	760						

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	J. Settings for 1 der insection							
Control-	delivery	Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchir	fuel delivery ng point	intermed rotationa Torque- travel	speed
rev/min	cm ² 71000 strokes	rev/min 3	rev/min 4	cm ^S /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	mm
F 33	PS / 2800 min-	1	1	1	•	•	•	•
1400	51,5-53,5	1420	800	46,0-49,0				
F 32	PS / 2500 min-	1						
1250	52,5-54,5	1270	800	46,0-49,0				
	PS / 2500 min ⁻							
1250	49,5-51,5	1270	800	44,0-47,0				
A 28	PS / 2500 min-	1	;					
1250	49,5-51,5	1270						
F 30	PS / 2300 min	1						· · · · · · · · · · · · · · · · · · ·
1150	48,5-50,5	1170	800	46,0-49,0				
B 28	,5 PS / 2300 mi	n=1						
1150	45,5-47,5	1170	800	44,0-47,0				
A 26	PS / 2300 min	1						
1150	45,5-47,5	1170						
F 26	PS / 2000 min	1						***************************************
1000	43,5-45,5	1010	800	46,0-49,0				
B 25	PS / 2000 min	1						
1000	41,5-43,5	1010	800	44,0-47,0				•
A 23	PS / 2000 min	1						
1000	41,5-43,5	1010						
A 21	PS / 1800 min	1						
900	41,5-43,5	910						
A 17	PS / 1500 min	1						
750	39,5-41,5	760						

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engine p Full-load Control-re Test oil te	delivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting! Idle switchin	fuel delivery ig point	intermed rotationa Torque-	l speed
rev/min 1	cm ³ /1000 strokes 2	rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	travel rev/min 8	mm
F 50 !	PS / 2800 min ⁻¹		1 1		1	•	•	•
1400	48,5-50,5	1420	800	46,0-49,0				
F 48,	5 PS / 2500 mir	1-1					· - ,	
1250	50,5-52,5	1270	800	46,0-49,0				
B 46,	5 PS / 2500 mir	1-1						***************************************
1250	47,5-49,5	1270	800	43,0-46,0				
A 42	PS / 2500 min ⁻¹							
1250	47,5-49,5	1270						
F 46	PS / 2300 min ⁻¹							
1150	47,5-49,5	1170	800	46,0-49,0				
B 44 I	PS / 2300 min ⁻¹	_						
1150	45,5-47,5	1170	800	43,0-46,0				
A 40 I	PS / 2300 min ⁻¹			· · · · · · · · · · · · · · · · · · ·				
1150	45,5-47,5	1170						
F 40 I	PS / 2000 min-1	_						
1000	44,5-46,5	1010	800	46,0-49,0				
в 38,	5 PS / 2000 min	1-1		· · · · · · · · · · · · · · · · · · ·				
1000	42,5-44,5	1010	800	43,0-46,0				
A 35 I	PS / 2000 min-1							
1000	42,5-44,5	1010						
A 31,	5 PS / 1800 min	1-1		· · · · · · · · · · · · · · · · · · ·				
900	40,5-42,5	910						
A 26 I	PS / 1500 min-1							
750	39,5-41,5	760						

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Full-loa Contro	power ad delivery I-rod stop I temp 40°C (104°F)	Rotational-speed limitation	Fuel delin	very characteristics	Starting fuel delivery idle switching goods	Intermediate rotational speed Torque-control
rev/mir	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min cm ³ /1000 strokes	travel rev/min tmm
1-	2	3	4	5	6 7	8
F 68	PS / 2800 min-	1	•	•	•	•
1400	49,5-51,5	1420	800	46,0-49,0		
F 66	PS / 2500 min	1				
1250	50,5-52,5	1270	800	46,0-49,0		
B 63	PS / 2500 min	1				
1250	47,5-49,5	1270	800	44,0-47,0		
A 57	,5 PS / 2500 mi	_n -1				
1250	47,5-49,5	1270				
F 61	PS / 2300 min-	1				
1150	47,5-49,5	1170	800	46,0-49,0		
B 58	,5 PS / 2300 mi	_n -1				
1150	45,5-47,5	1170	800	44,0-47,0		
A 53	,5 PS / 2300 mi	n -1				
1150	45,5-47,5	1170				
F 53	PS / 2000 min	1				
1000	43,5-45,5	1010	800	46,0-49,0		
B 51	PS / 2000 min	1				
1000	41,5-43,5	1010	800	44,0-47,0		,
A 46	,5 PS / 2000 mi	n ⁻¹				
1000	41,5-43,5	1010				
A 42	PS / 1800 min-	1				
900	40,5-42,5	910				
A 35	PS / 1500 min-	1				
750	39,5-41,5	760				
						

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engine per Full-load of Control-ro Test oil te	Jelivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchis	fuel delivery 19 point	Intermed rotationa Torque-	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ^S /1000 strokes	i	cm ³ /1000 strokes		mm
1	12	3	4	5	6	7	8	
F 102	PS / 2800 min	·1 —						
1400	49,5-51,5	1420	800	46,0-49,0				
F 99 F	S / 2500 min ⁻¹	· · · · · · · · · · · · · · · · · · ·					· · · · · · · · · · · · · · · · · · ·	
1250	50,5-52,5	1270	800	46,0-49,0				
B 95 F	S / 2500 min-1							
1250	47,5-49,5	1270	800	44,0-47,0				
A 86 F	S / 2500 min ⁻ 1							 -
1250	47,5-49,5	1270						
F 92 F	S / 2300 min-1							
1150	47,5-49,5	1170	800	46,0-49,0				
B 88 F	S / 2300 min ⁻¹							,
1150	45,5-47,5	1170	800	44,0-47,0				
A 80 F	S / 2300 min ⁻¹					-		
1150	45,5-47,5	1170						
F 80 F	S / 2000 min ⁻¹							-
1000	43,5-45,5	1010	800	46,0-49,0				
B 77 P	S / 2000 min-1		· · · · · · · · · · · · · · · · · · ·					
1000	41,5-43,5	1010	800	44,0-47,0				
A 70 P	S / 2000 min-1							
1000	41,5-43,5	1010						
A 63 P	S / 1800 min ⁻¹							··
900	40,5-42,5	910						
A 52,5	PS / 1500 mir	<u>1-1</u>						
750	39,5-41,5	760						

engine ro Full-load o Control-ro Test oil te	lelivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting Idle switchin	fuel delivery	Intermed rotationa Torque-	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	lww
1	2	3	4	5	6	7	8	
B 48 F	PS / 3000 min-	<u>.</u> 1	•	•	•	•		•
15C0	47,0~49,0	1520	800	49,5-52,5				
A 43,5	5 PS / 3000 mi	n-1			 			<u></u>
1500	44,0-46,0	1520						
F 55 F	PS / 2800 min	1			<u></u>			
1400	53,5-55,5	1420	800	52,5-55,5				
F 53 F	S / 2500 min	1						
1250	55,5-57,5	1270	800	52,5-55,5				
B 50 F	PS / 2500 min	1						
1250	52,5-54,5	1270	800	49,5-52,5				
A 46,5	5 / 2500 min ⁻¹	and the second s						
1250	48,0-50,0	1270						
F 50 F	'S / 2300 min-	1						
1150	56,0-58,0	1170	800	51,0-54,0				
B 48,5	PS / 2300 min	_n -1						
1150	51,5-53,5	1170	800	49,5-52,5				
A 44 P	S / 2300 min ⁻¹	1			# ************************************			
1150	47,0-49,0	1170						
F 46 P	S / 2000 min ⁻¹							
1000	54,0-56,0	1010	750	52,5-55,5				
B 44 P	S / 2000 min-1	1					 	
1000	50,5-52,5	1010	750	50,0-53,0				
A 40 P	S / 2000 min-1	<u> </u>						
1000	46,0-48,0	1010						•

C. Settings	for Fuel In	jection	Pump with	Fitted	Governor
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engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deli			fuel delivery	intermediate rotational speed Torque-control	
rev/min	cm 1000 strokes	rev/min	rev/min	cm ⁹ /1000 strokes	rev/min	cm ³ /1000 strokes	travel rev/min	mm
1	2	3	4	5	6	7	В	

B 40 PS / 1800 min-1

900 49,5-51,5

910

750

50,0-53,0

A 36,5 PS / 1800 min⁻¹

900 45,0-47,0

910

B 33,5 PS / 1500 min⁻¹

750 47,5-49,5

760

A 30,5 PS / 1500 min⁻¹

750 43,5-45,5

760

engine po Full-load o Control-ro Test oil tei	telivery	Rotational-speed limitation	Fuel deliv	rery characteristics	Starting Idle switching	fuel delivery	intermed rotationa Torque-	speed
rev/min	cm ³ 1000 strokes 2	rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	travel rev/min 8	mm
В 64 Р	S / 3000 min ⁻¹		1		•		•	•
1500	47,5-49,5	1520	800	49,0-52,0				
A 58 F	PS / 3000 min ⁻¹	 						
1500	44,0-46,0	1520						
F 74 F	S / 2800 min ⁻	_					* <u>***</u>	
1400	53,5-55,5	1420	800	52,0-55,0				
F 70,5	5 PS / 2500 mir	₁ -1						
1250	52,5-54,5	1270	800	52,0-55,0				
B 67 F	S / 2500 min ⁻		 					
1250	49,0-51,0	1270	800	49,0-52,0				
A 61 F	S / 2500 min-]						
1250	44,5-46,5	1270						
F 67 F	PS / 2300 min-							
1150	51,5-53,5	1170	800	52,0-55,0				
B 64,5	5 PS / 2300 mi	_n -1						
1150	49,0-51,0	1170	800	49,0-52,0				
A 58,5	5 PS / 2300 mi	n ⁻¹		<u> </u>	······································			•
1150	44,5-46,5	1170						
F 61 F	PS / 2000 min ⁻	1						
1000	50,0-52,0	1010	750	49,5-52,5				
B 58,5	5 PS / 2000 mi	_n -1						
1000	48,0-50,0	1010	750	49,5-52,5				
A 53 F	PS / 2000 min ⁻	1						
1000	44,0-46,0	1010						
								

1 2 3 53 PS / 900 47	1800 min 7,0-49,0	910	750	cm ⁹ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	travel rev/min 8	mm
900 47		1	 	 	6	7	<u> </u> 8	ļ
900 47		- -	750	49,5-52,5	•	•	•	•
	,0-49,0	910	750	49,5-52,5				
1 49 PS /	1800 min-	1						
900 43	,0-45,0	910						
3 44,5 PS	/ 1500 mi	_n -1	 					
750 47	,0-49,0	760						

760

43,0-45,0

760

C Settings	for Fuel	Injection Pum	n with Fitted	Governor
C. Serings	ioi ruei	Injection runi	h with Lifted	1 GOAGIIIOI

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)	Rotational-speed limitation	Fuel deliv	very characteristics	Starting fuel delivery lote switching point		rotational	
rev/min cm ³ /1000 strokes	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	mm
B 96 PS / 3000 min-	<u>1</u> -	1	•	•	I "	•	•
1500 51,5-53,5	1520	800	50,0-53,0				
A 87 PS / 3000 min-	1						
1500 47,5-49,5	1520						
F 112 PS / 2800 min	-1						
1400 58,0-60,0	1420	800	53,0-56,0		•		
F 106 PS / 2500 min	-1					····	
1250 57,5-59,5	1270	800	53,0-56,0				
B 101 PS / 2500 min	-1						
1250 54,0-56,0	1270	800	50,0-53,0				
A 92 PS / 2500 min	1						
1250 49,0-51,0	1270						
F 101 PS / 2300 min	-1						
1150 57,5-59,5	1170	800	53,0-56,0				
B 97 PS / 2300 min-	1						
1150 55,0-57,0	1170	800	50,0-53,0				
A 88 PS / 2300 min	1						
1150 50,0-52,0	1170						•
F 92 PS / 2000 min-	1						
1000 52,5-54,5	1010	750	50,0-53,0				
B 88 PS / 2000 min	1						
1000 50,0-52,0	1010	750	50,0-53,0				
A 80 PS / 2000 min-	1						
1000 45,5-47,5	1010						

engine p Full-load Control-re Test oil te	aelivery	Rotational-speed limitation	Fuel deliv	very characteristics	Idle	fuel delivery	intermediate rotational spee Torque-contro travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	1	mm
1	2	3	4	5	6	7	8	<u> </u>
B 80	PS / 1800 min-	1	•	•	•		,	'
900	50,0-52,0	- 910	750	50,0-53,0				
								
A 73	PS / 1800 min-	1						
900	45,5-47,5	910						
								
B 67	PS / 1500 min ⁻	1 						
750	50,0-52,0	760	650	52,0-55,0				
								
A 61	PS / 1500 min-	<u>1</u>						
750	45,5-47,5	760						

estoil-ISO 4113

WPP 001/4 5,7 v 2

2. Edition

PES 6A 90D 410PS 2596

RQV300-1400 AB1066-1DL

supersedes 4.80

company: engine:

Daimler-Benz

OM 352 A

125 kW(171 PS)

1 - 5 - 3 - 6 - 2 - 4 $0 -60 -120 -180 -240 -300 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (1,95-2,15) Port closing at prestroke 2,00-2,10

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	13,1+0,1	7,2 - 7,3	0,3(4,5)			
300	8,9-9,1	1,1 - 1,7	0,2(0,4)			
500/500	-	C, Sp.4-5	0,4(0,55)			
	· .					
					ļ	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed			intermediate	rated spe	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	(1a) (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
ca.68	1400 1800	15,2-17 0 -		-	-	-	ca.16	100 300 740-	min.10,5 8,9-9,1 800=2,0		1,2 2,5-2,7 8,6
ca.62	12,1	1440-145 1595-162					400-470				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load di Control-roi Test oil ten rev/min	d stop np. 40°C (104°F) 2	Rotational-speed ②D limitation intermediate speed rev/min 4a	high idle s	cm³/1000 strokes	ldie switchir	•	Torque- travel rev/min	Control 5 Control rod travel mm 9 +0,2
LDA 1400	0,7 bar 72,5-73,5 (72,5-75,5)	1440-1450*	LDA 500 LDA 500	0,7 bar 72,5-74,5 (70,5-76,5) 0 bar 58,0-60,5 (56,0-62,0)	100	72,25-82,25 100-220 (80-240)	1400 1225 1050 500	13,1 13,4 14,0 14,3

Chucking values in brackets

* 1 mm less control rod travel than col. 2

8.80

Test at n =

rev/min decreasing pressure - in bar gauge pressure

MB 5,7 v 2

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1	9	1

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar Gauge pressure =	bar mm (1)
2596 with 1066-1DL	0,7	0,35 0,225 0	14,3 - 14,4 14,0 - 14,1 13,4 - 13,6 13,0 - 13,1

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

② Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 6,2 k

4. Edition

<u>En</u>

PE 6 A 85 D 320 RS 2546 2546Z.

RQ 250/1300 AB 1023 R EP/RSV 250-1300 A 5 B 2025 R supersedes

2.79 DAF

company: engine:

DF 615

See Service Information VDT-I-DAF 004

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,2	5,4 - 5,6	0,3(0,45)			
250	+0,1 7,3-7,7	1,4 - 1,9	0,2(0,4)			
	•	ence between col		travel 9	mm and max. 3.0	- 4.0° camsha

B. Governor Settings

PRG che	cck Control rod travel	Full-load s Setting po	cint Control rod travel	Test spec	ر. ا		Control rod travel	Test spe	cifications 5 Control rod travel	Torque o	Control rod (3)
rev/min 1	mm 2	rev/min 3	mm 4	mm 5	rev/min 6	rev/min 7	mm 8	rev/min 9	mm 10	rev/min 11	mm 12
550	19,6-20,4	550	20,0		1345-1360 1425-1455	250	6,5	100 250 300-	min.8,0 6,4-6,6 360=2,0	-	-
1300	Breakway	VH ca	.49°					400	0 - 1		
1550	0 - 1										

Torque-control travel on flyweight assembly dimension a =

nm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting 1 Idle spee	
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	Control rod travel cm3/1000 strokes:/ mm
1000	55,0 - 56,0 (53,0 - 58,0)			-	100	19 - 21

Checking values in brackets

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B. Governor Settings

EP/RSV..2025 R

Uppe Degree of deflection	r rated speed Control rod travel	rev/min Control rod travel	Interme	diate rated	speed	Control-	- Lower	rated speed Control rod travel	I L 9 /	rque control Control rod travel
of control lever	mm 2	mm rev/min 3	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11
loose	800	0,3-1,0				ca.21	230	5,5		± 0,1
	X =	4,0					100	min.19	1000	10,2
ca.67	9,2 4,0 1550	1340-1350 1355-1385 0,3 - 1,7					250 310-370 500	5,9-6,1 = 2,0 0 - 1	500 250	10,3 10,6

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat.		uel delivery naracteristics	Starting t	fuel delivery 5	5 4a Idle stop		
Test oil to	emp. 40°C (104°F)	Note: changed to) rev/min	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes		Control rod travel mm	
<u>. </u>	2	-	-	19	- °	'	8	9	
1000	55,0-56,0 (53,0-58,0)	1340-1350*							
"Z"									
1000	49,0-50,0 (46,9-52,0)	1240-1250*							

Checking values in brackets

Festoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever 1	r rated speed Control rod travel mm 2	Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	rated speed Control rod travel mm	12 0 1	rque control Control rod travel mm
29								

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Note:		el delivery aracteristics	Starting f Idle	uel delivery 5	4a Idi	e stop Control rod
rev/min 1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
		·						
				•				

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5,7 n 5 2. Edition

PES 6 A 90 D 410 RS 2520

ROV 300-1425 AB 982 DL

10.77 supersedes

company:

Daimler Benz

engine:

OM 352 A (172 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
1,80-1,90
Port closing at prestroke (1,75-1,95) mm (from BDC)

rev/min 1	Control rod traval mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,5	7,9 - 8,0	0,3(0,45)			
300 800/600/500	+0,1 7,5-7,7 	0,9 - 1,5 C, 4 - 5	0,2(0,4) 0,4(0,55)	ľ		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated spe	eed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	1) mm 11
ca.66	1425 1800	16,0-19,4 0 - 1	_	-	-	ca.10	100 300	min.7,4 5,8-6,0	400	1,4-2,2
ca.61	10,5 4,0	1440-1450 1560-1590					800	530 = 2,0 0 - 1	1425	8,1
	:					(3a)				

0,5 mm Torque controi travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		limitation intermediate speed	high idle s	very characteristics 5a	Starting Idle switching		Torque- travel	control (5)
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min 8	travel mm
LDA 1400 800	0,7 bar 79,0-80,0 (77,0-82,0) 82,0-84,0 (80,0-86,0)	1440-1450*	LDA 600 LDA 500	0,7 bar 76,0-78,0 (74,0-80,0) 0 bar 62,0-65,0 (60,0-67,0)	100	14,0-14,6 mm RW	1400 1200 1000 600	11,5 11,8 12,1 12,6

Checking values in brackets

* 1 mm less control rod travel than col. 2

1.79

estoil-ISO 4113

Test at n = 800 rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
2520 with 982 DL	0,68		12,5 - 12,6
		0,18	12,2 - 12,3
		0,14	11,7 - 11,9
		0	11,5 - 11,6

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications 2 Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 7.2 f 3. Edition

PES 6 A 85 C 412	RS2104 RC RS2139,Z RS2139,Z RS2139	250/1250 250/1250 250/1250 250/1250	AB569D AB598	(1) (2) (3)	supersedes company: engine:	12.74 M A N D 0836 HM 4/M7 H HM70/71	(1) (2)
						HMN 70	(2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1.45-1.65)

mm (from BDC)

Rotational speed rev/min	Control rod travei mm 2	Fuel delivery C cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mrn 2	Fuel delivery D cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	. 9	4,9 - 5,5	0,4	9	4,1 - 4,5	
	6 15	1,3 - 2,1 12,4 -13,1		6	0,6 - 1,4	
200	9	3,9 - 4,4		9	1,4 - 2,2	

(4)

Adjust the fuel delivery from each outlet according to the values in

Setting point

rev/min

1200

Full-load speed regulation

rod travel

mm

B. Governor Settings

Control rod

Checking of slider

mm

1200 14,0-14,8

PRG check

rev/min

Testoil-ISO 4113

511D, 569D

Torque control Test specifications (5 (3)Control rod Control rod travel rev/min mm 450 15,7-16,6 0 - 1,8800 15,0-15,4 2,9-5,3 5,2-7,4 1100 14,4-14,7 6.5-8.1

Torque-control travel on flyweight assembly dimension a =

0,5

1290 - 1305 = 1.5Speed regulation: At

idle speed regulation

Control

mm

rod travel

travei

mm

10

rev/min

440

400

300

200

100

Setting point

rev/min

540

1 mm less control rod travel

(1)

C. Settings for Fuel Injection Pump with Fitted Governor

Test specifications

rev/min

1260 12,4-14,4

14,2-14,4

3,0-11,0

0

0 - 6,4

Control

mm

red travel

1250

1300

1340

1380

			•		. –	
	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting for	uel delivery 6
rev/min 1	cm ³ /-1000 strokes	rev/min	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	nd travel cm ³ /1000 strokes:/ mm 7
(1) 1250	71,5 - 73,5		700	70,5 - 73,5	100	21 mm RW
(1-Z) 1250	73,5 - 75,5		700	72,5 - 75,5	250	(→ 569D) 6,0 mm RW
(inrea	se by \pm 1,0 cm ³ !)				./.

Checking values in brackets

8.78

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HM

estoil-ISO 4113

Checkin PRG che rev/min 1	Control rod travel	Full-load s Setting po rev/min 3	•	-	rev/min	Idle spec Setting p rev/min 7	Control rod travel		cifications 5 Control rod travel mm			3
600	15,7-16,3	600	16,0		15,8-16,0 10,0-14,6 1,6-10,0	560	0	200	6,2-8,1 5,5-7,5 3,5-5,5	-	-	

Torque-control travel on flyweight assembly dimension a =

Speed regulation At 1290-1305 = 1,5

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 35	Starting ! Idle spee	guel delivery 6
rev/min	cm ³ /-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes	rev/min	rod travel cm ³ /1000 strokes / mm
(2) 1250	76,5-78,5		900	74,0 - 77,0		min. 19 mm RW
(2-z) 1250	75,5-77,5		900	73,0 - 76,0	250	6,0 mm RW
(inrea	se by ± 1,0 cm ³ !)				

Checking values in brackets

B. Governor Settings

645D	(3
------	----

1	Checking of slider Full-load speed regulation PRG check 1 Setting point Test specifications 4			Idle speed regulation Setting point Test specifications (5)				Torque control			
rev/min	Control rod travel mm 2		Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel		Control rod travel mm	rev/min	travel
600	15,7-16,3	600	16,0	1270 1300 1330 1400	14,74-14,7 8,0-13,8 0 - 10 0	560	0	100 200 300 460	6,8-8,1 5,6-7,7 3,4-5,6 0	1000	15,8-16,0 15,3-15,6 14,7-15,0

Torque-control travel on flyweight assembly dimension a = 0,4

Speed regulation At 1290-1305 = 1,5

1 mm less control

go		elivery on ontrol lever p. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting f	uel delivery d Control
re	ev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	red travel cm ³ /1000 strokes / mm 7
1	(3) 250	72,0-74,0		800	74,5 - 77,5	100 250	21 mm RW 6,0 mm RW
(incre	ase by ± 1,0 cm³!)				
n Chi	ecking va	lues in brackets					

②

Testoil-ISO 4113

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Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4
3. Edition

Er

PES 4 A 80 D 410 RS2131

RQ 250/1250 AB902DL

RO 250/1250 AB934DL ./.

supersedes 8,74 11.74

company: D COA

engine: (Korea)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	3.1 - 3.5	0,4			
	6	0,1 - 0,6				
200	9	0,6 - 1,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ 250/1250 AB 902DL

Checking PRG chec		speed re	-	cifications (4)	Idle spec	•	ation Test spe	Torque control			
rev/min	Control rod travel mm 2	rev/min 3	Control red travel rnm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod	rev/min 11	Control rod travel
600	19,7-20,3	600	20,0		18,4-18,8 10,2-15,3	550	0	150 250	9,0-11,1 5,6- 9,8	700	19,8-20,0
1300	Breakway	VH ca	.49°	1420 1530				350 450	1,5-4,0 0	1000	18,8-19,0

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travei

1.75

C. Settings for Fuel Injection Pump with Fitted Governor

governor	Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	3	Fuel deliv	ery characteristics	3 b	Starting f	uel delivery d I Centres
rev/min 1	cm ³ /-1000 strokes 2		rev/min 3		rev/min 4	cm ³ /~1000 strokes 5		rev/min 6	rad travel cm ³ /1000 strokes:/ mm 7
20° 1230	59,0-61,0				800 500	60,0 - 63,0 max. 59,5		100	mind.20mm RW
40° 1230	57,5-59,5			:	800 500	57,5 - 60,5 max. 59,5		250	8 mm

Checking values in brackets

H13

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Checkin PRG che	g of slider	Full-load s	•	-	cifications (4)	idle spec	•		cifications (5)	Torque o	control 3
rev/min	Control rod travel mm	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel rmm	rev/min 9	Control rod travel mm	rev/min	travel
600	15,7-16,3	600	16,0	1280 1350 1420 1520		550	0	150 250 350 450	6,2-8,1 4,5-6,8 1,8-4,1 0	700 1000	15,8-16,0 15,0-15,2

Torque-control travel on flyweight assembly dimension a = 0,3

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104°F)	Control rod stop (3a)	Fuel delive	ery characteristics	Starting f	uel delivery d Control
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	red travel cm ³ /1000 strokes / mm 7
See	page 1 !					

Checking values in brackets

B. Governor Settings

Checkin PRG che	g of slider eck	Full-load Setting p	•	-	cifications (4)	Idle spec	-		cifications (5)	Torque o	(3)
rev/min	Control rod travel mm	rev/min	Control rod travel rnm	Control rod travel mm	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11	12
									1		
				1							
								Î			
									ĺ	•	

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	telivery on control lever mp 40°C (104°F)	Control rod stop 3)	ery characteristics 3b	idle spee	uel delivery :d i C
rev/min 1	cm ³ /~1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes / m
					6	

WPP 001/4 DAF 8,3 k

3. Edition

En

PE 6 A 95 D 410 RS2525, Y,X, 2525, Y.X.

RQ 225/1200 AB1007L RSV 250-1200 A5 B 2013 DL

supersedes9.78

DHR 825

Test LDA and cold start in accordance with Service Information

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1,95-2,15)

RW 9 mm (from BDC)

ł	Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2 -	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	1000	12,6	10,8 - 11,0	0,3(0,6)	ì		
	225	+0,1 5,7-5,9	0,7 - 0,9	0,3(0,5)			
	600		C, 4-5	0,4(0,7)			
P	ort closing	differen	ce between cont	rol-rod ti	ravel 9 m	n and max. 3,0	4,0° camshaft

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ..1007 L

Checkin	_	Full-load s Setting po	•	•	cifications (4)	idle spe	•		cifications (5)	Torque o	control
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control rod travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel	rev/min	travel
650	19,2-20,8	650	20,0	11,6	1230-1245	225	5,8	100 225	min.7,3 5,7-5,9	-	-
1200	Breakway	VH.ca	.49°	4,0	1315-1345				380=2,0 0 - 1		
1450	0 - 1										

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting f	. —
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	Control red travel cm ³ /1000 strokes:/ mm
LDA 1000	0,7 bar 106,5-108,5 (104,5-110,5)		LDA 600	0 bar 77,5-80;5 (75,5-82,5)			
X 1000 Y 1000	90,5- 92,5 90,0-101,0	(12,0 mm RW) (12,5 mm RW)	600 600	77,0-80,0 77,0-80,0			./.

Checking values in brackets

The numbers denote the sequence of the tests

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermed	diate rate	d speed	Control- lever deflection in degraes 7	Lower rev/min 8	rated speed Control rod travel mm	rev/min	rque control Control rod travel mm 11 +0,1
loose	800 x =	0,3-1,0 3,0			•	ca.23	250 100	6,3 min.19	1000 500	12,6 12,7
ca.50	11,6 4,0 1450	1230-1240 1315-1345 0,3- 1,7	ļ				250 380-440 500	6,7-6,9	300	13,0-13,3

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting t	tuel delivery 5	4a Idie stop		
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
LDA 1000 X	0,7 bar 106,5-108,5 (104,5-110,5)	1230-1240*	LDA 600	0 bar 77,5-80,5 (75,5-82,5)	100	19-21mmRW			
1000	90,5- 92,5	(12,0 mmRW)	600	77,0-80,0					
1000	99,0-101,0	(12,5 mmRW)	600	77,0-80,0					

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

1 200 rev/min decreasing pressure - in bar gauge pressure XXXXXX

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
2525 with 1007L 2525 with 2013DL)	0,68		12,6 - 12,7
		0,27	12,2 - 12,3
		0,23	11,5 - 11,8
		0	11,2 - 11,3

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En

Test Specifications Fuel Injection Pumps 2 and Governors

2. Edition

supersedes 3.78

company:

OM Brescia

engine:

8340.04

RQ 300/1400 AB898DL PES 4 A 90 D 410 RS 2518

.. RS 2518 ROV 300-1400 AB1018L

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,8	6,9 - 7,1	0,3(0,45)	10,8	6,9 - 7,1	
	+0,1			+0,1		
300	7,9-8,1	0,9 - 1,5	0,2(0,4)	7,9-8,1	0,9 - 1,5	
900/500		C, 4 - 5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ..989DL

Checking PRG che	ck (1)	Full-load s Setting po	int	Test spec	cifications (4)	Idle spec	ooint		cifications (5)	Torque o	(3)
rev/min	Control rod travel mm 2	rev/min 3	Control rod travel rnm 4	Control rod travel rnm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	travel mm	rev/min	Control rod travel mm 12
1000	14,8-15,6	1000	15,2		1445-1460	300	6,0	100 300	min.7,5 5,9-6,1	1400	+ 0,1 10,8
1400 1700				4,0	1540-1570)	1	450- 600	490=2,0 0 - 1	740 600	10,9 11,1

Torque-control travel on flyweight assembly dimension a = 0.4

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	3ь)	Starting f Idle spee	uel delivery d Contrel
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	red travel cm³/1000 strokes:/ mm 7 mm RW
1400	69,5-70,5 (67,5-72,5)	500	900	64,5-67,5 (62,5-69,5)		100	16,2-16,6
			500	59,5-62,5 (57,5-64,5)	,		
							./.

Checking values in brackets

B. Governor Settings

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Sliding	leave travel
deflection	Control	Control rod (1a travel	Degree of deflection	1	Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rodtravel mm	mm rev/min (2a	of control lever	rev/min	mm 4	of control lever	rev/min	mm (3	rev/min	mm
1	2	3	4	5	6	7	8 .	9	10	11
ca.68	1410 1650	15,0-18,3 0 - 1	-	-	-	ca.12	100 300	min.7,9 6,3-6,5	300	0,3-1,4
								760=2,0 0 - 1	1410	8,2
ca.66	9,8	1440-1450 1500-1530				350.450			-	-

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv high idle s	very characteristics (5a) speed (5b)	Starting Idle switchin	\sim	Torque- travel	Control roo
rev/min	cm ³ /1000 strokes	rev/mi/1 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1400	69,5-70,5 (67,5-72,5)	1440-1450*			100 24 V	16,2-16,6 Electromagne		

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding s	eeve travel
deflection		Control rod	ta	Degree of deflection of control		Control rod travel	Degree of deflection of control	1	Control rod travel		1
of control lever	mm	rev/min	(2a)	lever	rev/min	mm 4	lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
							3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load do Control-roo Test oil ten		Rotational-speed (2b) timitation intermediate speed (4a)	Fuel delivenightide s	very characteristics 5a speed 5b cm³/1000 strokes	}	fuel delivery 6 ng point cm ³ /1000 strokes	Torque- travel	Control cod travel
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

H18

WPP 001/4 MAN 11,1 p 2 3. Edition

RQ250/1100 AB 1049 DL (1) PES 6 A 95 D 410 LS 2541 250/1050 AB 1042 DL (2) LS 2541 250/1050 AB 1042 DL (3) LS 2541Z

supersedes company:

1.80

engine:

MAN D2566 MUH

(1) 161,8 kW(220 PS)

(2) 141,0 kW(192 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

(3) 129,0 kW(175 PS)

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-ISO 4113

1,50-1,60

mm (from BDC)

Cyl.	6
------	---

nm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm³/100 strokes 3	rnm 6
11,2-11,3	11,4-11,6	0,3(0,6)	9,8-9,9	9,5-9,7	n= 1050 (2)
5,9-6,1 -	0,8- 1,4 C, 4-5	0,3(0,5) 0,4(0,7)	1	8,7-8,9 0,8-1,4	n= 1050 (3)
2	11,2-11,3	3 11,2-11,3 11,4-11,6 5,9-6,1 0,8-1,4	3 4 11,2-11,3 11,4-11,6 0,3(0,6) 5,9-6,1 0,8-1,4 0,3(0,5)	3 4 2 11,2-11,3 11,4-11,6 0,3(0,6) 9,8-9,9 5,9-6,1 0,8-1,4 0,3(0,5) 5,9-6,1	3 4 2 3 11,2-11,3 11,4-11,6 0,3(0,6) 9,8-9,9 9,5-9,7 6,9-6,1 0,8-1,4 0,3(0,5) 5,9-6,1 0,8-1,4

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1)

Checking PRG che	g of slider	Full-load s	•	-	cifications (4)	Idle speed regulation Setting point Test specifications			cifications (5)			
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel rnm 4	Control rod travel rnm 5	rev/min	rev/min 7	Control rod travel rn:m 8	rev/min 9	Control rod travel mm 10	rev/min	travel	
	15,6-16,4 11,0-11,4	600	16	10,2 4,0	1145-1160 1185-1215		6,0	100	min.7,5	1100 845	11,2-11,3 11,2-11,5	
1250	0 - 1							250 360-4	5,9-6,1 00 = 2,0	750 600	11,4-11,6 11,6-11,7	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3	Fuel deliv	ary characteristics 3b	Starting for	et delivery Contras	
rav/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7	
1100	112,5 - 114,5 (110,5 - 116,5)		700 500	102,5-105,5 (100,5-107,5) max. 106,5 (108,5)	100 250	124,0-134,0 6,0	

Checking values in brackets

B. Governor Setting

	Full-load speed regulation RG check Test specifications				cifications (4)	idle spe	ed regula	ation Test spe	Torque control			
	Control rod travel	rev/min	Control rod travel room 4	Control rod travel mm 5	rev/min		Control rod travel mm 8		control rod Control rod travel mm	rev/min 11	Control rod travel mm 12 +0	<u>ی</u>
600	15,6-16,4	600	16,0	3,8	1095-1110	250	6,0	100	min.7,5	1050	9,8	
1050 1250	9,8-10,0 0 - 1			4,0	1165-1195			360-4	5,9-6,1 00 =2,0 0 - 1	815 600	10,4 10,7	:

(2)

Torque-control travel on flyweight assembly dimension a =

0,4 mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	Control rod travel cm ³ /1000 strokes / mm	
(2) 1050	93,5 - 95,5 (91,5 - 97,5)		700 500	90,0 - 93,0 (88,0 - 95,0) max. 91,5 (93,5)	100 250	124,0 - 134,0 6,0 mm RW	

Checking values in brackets

B. Governor Settings

(3)

Checkin	g of slider	Full-load	speed re	gulation	ulation Idle speed regulation					Torque control		
PRG che	ck (1)	Setting po	int	Test spe	cifications (4)	Setting p	oint	Test spe	cifications (5)		(3)	
l .	Control rod		Control rod travel	Control rod travel			Control		Control rod		Control rod	
rev/min		rev/min 3	mm 4	mm 5	rev/min 6		rod travel mm 8	rev/min 9	;	rev/min	travel mm 12 ±0,1	
600	15,6-16,4	600	16,0	8,2	1095-1110	250	6,0	100	min.7,5	1050	9,2	
					1160-1190			250	5,9-6,1	815	9,9	
1050	9,0-9,4							360-	400 =2,0			
1250	0 - 1							450	0 - 1	600	10,1	

Torque-control travel on flyweight assembly dimension a = 0,4

Speed regulation. At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor	full-load delivery on povernor control lever est oil temp. 40°C (104°F)		Control rod stop	39)	Fuel deliv	ery characteristics	3	Starting f	uel delivery d 6
rev/min 1	cm ³ /-1000 strokes 2		rev/min 3		rev/min 4	cm ³ /~1000 strokes 5		rev/min 6	cm ³ /1000 strokes / mm 7
(3) 1050	85,5-87,5 (83,5-89,5)			٠	700 500	81,0-84,0 (79,0-86,0) max. 80,5 (82,5)		100 250	124,0-134,0 6,0 mm RW

Test SpecificationsFuel Injection Pumps (2)

and Governors

40

WPP 001/4 DAF 6,2 1

1. Edition

En

supersedes

PE 6 A 85 D 320 RS2546

RQ 250/1200 AB 1023R RSV250-900 A7 B2061R --**--**----

company: DAF

engine:

D D 615

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.10)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9,5-9,6	4,8 - 5,0	0,3(0,45)			
250	5,9-6,1	0,9 - 1,5	0,2 (0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ.. 1023 R

1	Checking of slider Full-load speed PRG check 1 Setting point			-	cifications (4)	Idle spec	-		cifications (5)	Torque control		
rev/min	Control rod travel mm	rev/min 3	Control rod travel rnm 4	Control red travel rnm 5	rev/min	rev/min	Control rod travel mm	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
550	19,2-20,8	550	20,0	8,5	1245-1260	250	6,0		min.7,5	-	-	
1200	Breakway	VH ca	.49°		1310-1340			250	5,9-6,1	ľ		
1450	0 - 1							305- 450	345 =2,0 0 - 1		_	

Torque-control travel on flyweight assembly dimension a =

nm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting f	uel delivery d (6)
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm 7
1000	49,0 - 50,0 (47,0 - 52,0)					
						./.

Checking values in brackets

5.79

BOSCH

estoil-ISO

B. Governor Settings

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Studences	eeve travel
Degree of deflection	rev/min Controt rodtravel	Control rod (1a)	Degree of deflection		Control rod travel	Degree of deflection of control		Control rod travel	Silding s	1
of control lever	mm		of control lever	rev/min	mm 4	lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	88	9	10	11
loose	800	0,3-1,0	-	-	-	ca.19	250	5,5	650	
	Х	= 4,0			d 		100	min.19	10,5	10,6
ca.53	9,5 4,0 1100	940-950 955-985 0,3-1,7				(3a)	250	5,9-6,1 350= 2,0 0 - 1	370 11,7	12,3

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b Imitation intermediate speed	Fuel deliv	very characteristics 5a speed 5b	Starting Idle switchin		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
In acc namepl	ordance with ate	940-950*					J	

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated	speed			Intermediate	rated spe	ed	Lower rated	speed		Stedens	leeve travel
Degree of deflection of control	rod travel	i e	(a)	Degree of deflection of control	i	fravel	Degree of deflection of control	i	Control rod travel		l ^①
lever 1	mm 2	rev/min 3	(2a)	lever 4	rev/min 5	6 (4)	lever 7	rev/min 8	mm (3) 9	rev/min 10	mm 11
				1							
									1		
					! :						
							3 <u>a</u>				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		intermediate speed	Fuel deliv	very characteristics 5a speed 5b	Starting Idle switchin		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes 2	rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min	travel mm 9
					:	•		
								,

Checking values in brackets

* 1 mm less control rod travel than col. 2

H24

Test Specifications
Fuel Injection Pumps 2

and Governors

WPP 001/4

1. Edition

supersedes ...

PES 4 A 90 D 410 RS2518 RS2518Z

RQ 300/1200 AB989DL ..989DL

company: OM Brescia engine:

CO3/110 8340.05

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15-2,25

Port closing at prestroke mm (from BDC)

		(2,10-2,30)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,3	6,0 - 6,2	0,3(0,45)	11,1	6,9 - 7,1	
300 900/500	+ 0,1 7,9-8,1 	0,9 - 1,5 C, 4 -5	0,2(0,4) 0,4(0,55)	1	0,9 - 1,5	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

(1)

Checkin	(1)				cifications (4)	Idle speed regulation Setting point Test specifications (5				Torque control		
rev/min	Control rod travel mm 2		mm	Control red travel mm 5	rev/min	rev/min	Control rod travel	rev/min	Control rod	rev/min	Control rod travel mm	
600	15,6-16,4	500	16,0		1245-1260	300	6,0	100	min.7,5		± 0,1	
1200 1450				4,0	1360-1390			300 450-4 600	5,9-6,1 90 = 2,0 0 - 1	1200 710 630	10,3 10,6 10,9	

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d (6)
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm
1200	60,5 - 61,5 (58,5 - 63,3)	500	900	55,5 - 58,5 (53,5 - 60,5)	100	116,25-122,25
			500	58,5 ~ 61,5 (56,5 ~ 63,5)		
						./.

Checking values in brackets

Checkin PRG che	g of slider	1	Full-load speed regulation Setting point Test specifications			Idle speed regulation				Torque control		(3
rev/min	Control rod travel	rev/min	Control rod travel mm	Control rod trävel mm 5	rev/min 6	rev/min	Control rod travel mm 8	rev/min	Control rod travel	rev/min	Control rod	<u>ુ</u>
600	15,6-16,4	600	16,0	10,1	1245-1260		6,0	100 300	min.7,5 5,9-6,1	1200	± 0	
1200 1450	15,6-16,0 0 - 1			7,0	1370 1400			445- 600	485=2,0 0 - 1	710 500	11,3	

Torque-control travel

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on Control lever np 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed Contro		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes / mm 7	
1200	69,5 - 70,5 (67,5 - 72,5)	500	900	67,5 - 70,5 (65,5 - 72,5)	100	126,25-129,25	
			500	61,5 - 64,5 (59,5 - 66,5)			

Checking values in brackets

B. Governor Settings

Checking PRG che	g of slider	Full-load : Setting po	•	Test spec	cifications (4)				(-)	Torque o	(3)
rev/min	Control rod travel mm	rev/min	control rod travel mm	Control rod travel mm 5	rev/min	rev/min	Control rod travel mm 8		Control rod travel mm	,	Control rod travel mm

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governo	d delivery on or control lever temp. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting for	Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min	red travel cm ³ /1000 strokes / mm 7

Fuel Injection Pumps and Governors

VDT-WPP 001/4 1. Edition

En

PES 8 A 75 D 320 RS 2463 Inlet pressure 2.5 bar (1)

EP/RSV 450-1300 AOB 1088 D

supersedes

company:

IHC DV 550 C

engine:

(172 PS)

See note 1,2,3 -page 3!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,3)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	10,75-	6,7 - 6,8	0,3			
300	10,85	0,1 - 1,5 - 3,6 - 4,2 -	(Cyl. 1- (Cyl. 2-	4-6-7) 3-5-8)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	ction travel deflection travel				Lower rated speed Degree of deflection of control lever rev/min mm 7 8 9			3 Tor rev/min 10	que control Control rod travel mm 11	
ca.52	1300 1320 1500	12.8-13,2 12,2-12,6 4,8- 6,8	without auxiliary spring			ca.30	450 100 380	5,7 19 - 21 6,5-21,0	900 540	10,9- 11,1 10,9-
(5)	1580 1700	1,5- 4,0 0,2- 1,2	with auxiliary spring				600 750	1,5- 3,5 0- 1,0		11,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.		el delivery tracteristics	Starting Idle	fuel delivery	Sa) Idi	5a) Idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes		rev/min	rev/min cm³/1000 strokes 6 7		Control rod travel mm 9	
1300	67,0-68,0 (66,0-69,0)	1475 1475: 6-7 mmRW	900	61,5-63,5 (60,5-64,5)	100 450 100 450	112,0-135,0 8,0- 10,0 0 0		2-3-5-8 1-4-6-7 •/•	

Checking values in brackets

- (1) Supply pressure 2.5 bar
- (2) Barrel 1: Start of dely. at CRT 10.7 = 1.95 + 0.05 mm cyl. 1-7-6-4 (90° each) Barrel 2: Port opening at CRT 10.7 = 3.95 + 0.05 mm cyl. 2-8-3-5 (90° each)
- (3) In start-of-delivery position of barrel 1 at CRT 10.7 mm, use setting device to position jaws of coupling horizontally and tighten screws to 25 30 N!

40

VDT-WPP 001/4 2. Edition

En

PES 6 A 85D 420 LS 2264

EP/RSV 375-1100 A 2 B 636 DR

supersedes

22.3.73

company: engine: Case A 504 BD

Test with case overflow valve!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,5			
	6 12	1,1 - 1,9 7,2 - 8,0				
200	6	0,9 - 1,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lower	r rated spe	ed	3 Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca.47	•	13,0			•••	ca.23	375	7,9	1100	0
	1160 1190	8,6 4,4	sprin		iliary		150	19 - 21	900	0,5-0,7
				,			375	7,6-8,2	600	0,7-1,0
5	1140 1200 1260	12,6-13,2 4,0-6,2 0,3-1,5	with a spring		ary		450 620	4,5-6,1 0 -1,5		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-loa	ad stop				Starting Idle	fuel delivery	(5a) Idle stop		
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9	
1100	92,5-94,5	1140-1155*	750 650 1200	101,5-105,5 max. 104,5 12,5- 20,5	100	12,6-13,4	375	18,5- 22,5	

Checking values in brackets

* 1 mm less control rod travel than col. 2

As opposed to VDT-MPP 001/4 - 1st supplement - pumps 2263, 2264, 2354, 2459, 2460, 2461 and 3013 feature the following special setting:

1. Governor-spring adjustment	corresponds to	(1)
Pre-adjustment of full-load delivery and noting down of control-rod travel	roughly corresponds to	(2)
3. Reduce full-load control-rod travel as opposed to (by 1.0 mm by screwing back full-load stop screw	(2) roughly corresponds to	(2)
4. Screw in torque-control retainer until full-load delivery is attained	roughly corresponds to	(3)
5. Adjustment of breakaway	corresponds to	(4)
Testing of torque control and fuel-delivery characteristics	roughly corresponds to (3)	(3a)
7. Idle adjustment	corresponds to	(4)
8. Testing high idle; test starting fuel delivery and adjust with control-rod stop	corresponds to	(5)

Please consult test instructions as regards information given in parentheses!

Testoil-ISO 4113

WPP 001/4 MB 5,7 n 4

1. Edition

En

PES 6 A 90 D 410 RS 2517

ROV 300-1425 AB981L

supersedes

company:

Daimler-Benz OM 352

engine: OM 352 (130 PS)

** TAS-Instruction see page 2!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,15-2,25 mm (from BDC)

Rotational speed rev/min	travel		Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,7	6,1 - 6,3	0,3(0,45)			1
300	(+0,1) 7,3-7,5	0,6 - 1,2	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min (2a)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.66	1425 1700	16,0-19,4 0 - 1		<u>.</u>		ca.10	100 300 570	min.7,3 5,7-5,9 -630=2,0	400 1425	1,4-2,2 8,1
ca.61	8,7 4,0	1455-1465 1540-1570				39	800 350-	0 - 1		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed (2b) Fuel delive high idle speed rev/min (4a)		very characteristics 5a cpeed 5b cm³/1000 strokes	Starting Idle switchin	•	Torque- travel	control 5 Control rod travel mm
1	2	3	4	5	6	7	8	9
1400	61,5-62,5 (59,5-64,5)	1455-1465*			100	10,1-10,3 mm RW**		
	:				300	6,25-12,25		
					100-	-220(80-240)		./.

Checking values in brackets

Note: **

TAS (temp.-cont'd lim. of start-fuel dely.) is set after adjusting full-load delivery and switching point:

- 1. Additionally attach control-rod-travel measuring device 0 681 440 009 (EFEP 171) and make it correspond to previously fitted control-rod-travel measuring device on drive end.
- 2. Detach control-rod-travel measuring device on drive end.
- 3. Fit TAS and at $n = 100 \text{ min}^{-1}$ set it to 10.1 10.3 mm control-rod travel at ambient temperature.
- 4. Tightening torque 3.0 mkp on threaded bushing at pump housing.

WPP 001/4

DAF 6,2 c 3

1. Edition

PE 6 A 90 D 320 RS2384

EP/RSV 250-1200 A5 B779R

supersedes

Refer to Page 2 for LDA (manifold-pressure compensator) setting and start test!

DT 615

Port closing difference between control-rod travel 9 mm and max. 2,5 - 3.5°

company: DAF

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,20-2,30 Port closing at prestroke (2,15-2,35) RW 9 mm (from BDC)

Rotational speed rev/min	travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,3	7,0 - 7,2	0,3(0,45)			
250 600	5,8-6,0 	+0,1 0,8 - 1,2 C, 4-5	0,2(0,4) 0,4(0,55)	i .		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm 3	Intermediate Degree of deflection of control tever	rated spe rev/min 5	ed Control rod travel mm 6	Degree of deflection of control lever rev/min rev/min 9			3 Too	cque control Control rod travel ± 0,1 mm
loose	800	0,3-1,0				ca.22	250	5,5	250	10,8
ca.54	9,4 4,0 1450	1240-1250 1285-1315 0,3-1,7	*				100 250 380-4 520	min.19 5,9-6,1 10 = 2,0 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

•	ead stop				Starting Idle	fuel delivery	5a Idle stop	
Test oil temp. 40°C (104°F) rev/min		Note: changed to rev/min 3	rev/min cm³/1000 strokes 5		rev/min cm³/1000 strokes		rev/min 8	Control rod travel mm
LDA 1000	0,7 bar 70,5-71,5 (68,5-73,5)	1240-1250*	LDA 600	0 bar 50,0-52,0 (48,0-54,0)				
								./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

1000

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting		Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1)
2384 with 779R	0			9,3 - 9,5
			0,14	9,6 - 9,9
			0,26	10,1 -10,2
			0,68	10,3 -10,4
	,			
	+			

Notes:

Testoil-ISO 4113

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Adjustment information:

- 1. First adjust full-load delivery at max. pressure at LDA (manifold-pressure compensator) stop screw in housing.

 Then set 1/2 of a turn more control-rod travel at injected-quantity stop screw of governor.
- 2. Adjust full-load delivery without charge-air pressure at bell crank in LDA.
- 3. Cold-start device (see sketch)

Test disengaging force at $n = 0 \text{ min}^{-1} = 32 - 38 \text{ N}$ with spring scale.

Set starting control-rod travel to 20 + 0.5 mm.

Test disengaging speed $n = 800 - 1000 \text{ min}^{-1}$.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 0MB 7.4 a

4. Edition

PES 6 A 90 C 410 RS 2340 .. D ..

ROV 250-1300 AB 803 D RQV 325-1050 AB 923 D ROV 250-1300 AB 944 D supersedes

12.71,7.74,3.75

OM Brescia

CP 3 engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2-15+0-1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,8 - 6,3	0,4			
200	6 12 9	2,5 - 3,4 10,2 -11,1 3,2 - 4,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV .. 803D

deflection	rev/min Control	Control rod travel	(1)	Intermediate Degree of deflection	rated spe	Control rod travel	Lower rated Degree of deflection of control	speed	Control rod travel	Sliding s	leeve travel
of control lever	rod travel mm 2	mm rev/min 3	2a		rev/min 5	mm 4	lever	rev/min 8	mm 3 9	rev/min 10	mm 11
ca.66	1340 1450	15,0-17 8,2-12		_	-	•	ca.10	140 250	6,0-8,0 4,2-6,1	1340	8,3
	1550 1680	0,5-7						400 630		1300	0
							3 a			600	0,1-0,3

Torque controi travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten	1 stop np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/min	bed (39)		idle switchir	•	Torque- travel	Control 5 Control rod travel
1	2	3	4	5	6	7	8	9
1300	74,0 - 76,0	1320	1000 600		100	ca.15mmRW		

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Checking values in brackets

Upper rated s	peed	·		Intermediate	rated spe	ed	Lower rated	speed		Stidenge	eeve travel
Degree of deflection of control	rev/min Control rodtravel	Control rod travel	(la)	Degree of deflection of control		Control rod travel	Degree of deflection of control	Ì	Control rod travel	Siluling s	1
lever	mm	rev/min	(2a)	lever	rev/min	mm 4	lever	rev/min	mm 3	rev/min	mm
11	2	3		4	5	6	7	8	9	10	11
ca.68	1060 1120 1220	15,0-18, 9,7-14,		-	-	-	ca.18	150 250 380	9,6-11,7 7,4-10,0 2,0- 5,0	1	8,3
	1310	0						670	0	1060	0
							3 a)			600	0,3-0,4

Torque control travel a =

0.3 mr

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a speed 5b	Starting Idle switchir	$\mathbf{\mathcal{O}}$	Torque- travel	Control rod
rev/min 1	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1050	77,5-79,5	1090-1100*	500	66,0-69,0	100	15,0-15,6mm ge-over point		
	,					270 U/min		

Checking values in brackets

* 1 mm less control rod travel than col 2

** Use overspeed sensor to effect adjustment such than lamp lights up at n = 1455-1465. Check full load after setting sensor!

B. Governor Settings

RQV .. 944 D

Upper rated s	peed		Intermediate	e rated spe	ed	Lower rated	speed		Sliding s	leeve travel
		Control rod (1	/ Linection	ı	Control rod travel	Degree of deflection	l	Control rod travel	J	1
of control lever	rod travel	rev/min (2	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.66	1340 1450	15,0-17, 8,2-12,		-	_	ca.10	140 250	6,0-8,0 4,2-6,1	1340	8,3
	1550	0,5-7,	9				400	0,2-1,4	1300	0
	1680	0					630	0	600	0,1-0,3
						<u>3a</u>				

Torque control travel a =

mm.

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil terr					Starting Idle switching	fuel delivery 6	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes		cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1300	74,0-76,0	1340-1350* **	1100 500	73,5-76,5 61,0-64,0	100	ca.15mm RW		
					1			

Checking values in brackets

* 1 mm less control rod travel than col. 2

116

WPP 001/4 MB 5,7 v 1

1. Edition

PES6A90D410RS2571

RQV300-1400AB884L

supersedes

company:

Daimler-Benz

engine:

OM 352 A

1 - 5 - 3 - 6 - 2 - 4

 $0 - 60-120-180-240-300 \pm 0,50 (0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,00-2,10
2,00-2,10
mm

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control vaive) mm 6
1400	12,0-12,1	6,4-6,5	0,3(0,45)			
300 600	6,4-6,6	0,8-1,4 C, 4-5	0,2(0,4) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding slaeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	rev/min (28	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	(1) mm
ca.68	1400 1750	15,2-17,8 0 - 1	-	-	-	ca.11	100 300 1100	min.8,0 6,4-6,6 max.1,0		
ca.54	12,0 3,4	1440-1450 1575-1605	1			<u>3</u> a	580- 370-	640=2,0 440		

Torque Control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm 1 2	n ³ /1000 strokes .	rev/min 4a)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min l	travel mm
1 2		3	١. ا					
1 1			4	5	6	7	8	9
	64,0-65,0 62,0-67,0)	1440-1450*	600	48,0-50,0 (46,0-52,0)	100	72,25-82,25		

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MAN 12,8 f and Governors

PE8A90D320LS2514

ROV250-1250 AB 1127 R

supersettes =

company:

D 2538 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

(1,45-1,65)

mm (from BDC)

RW 10.5

Cy1.8

POR CIOSING at pres	IN ORT	1 50-1 60				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	11,5	10,2 - 10,3	0,3(0,45)			
250 800 500	6,9-7,1 - -	0,9- 1,5 C, col. 4 - 5	0,2(0,4) 0,4(0,55) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in [

Testoil-ISO 4113

B. Governor Settings

Upper rated s	peed	·	Intermediate	rated sp	eed	Lower rated	speed	1	Sliding sleeve travel	
deflection	rev/min Control rod travel mm	Control rod travel (a)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rad travel	rev/min	1
1	2	3	4	5	6	7	8	9	10	11
ca. 68	1250 1500	15,2-17,8 0 - 1				ca. 13	100 250 450	min. 8,4 6,9-7,1 1,0	r :	1,1 4,5-4,9 8,8
ca. 47	10,5 4,0	1290-1300 1355-1385					345-4	105 = 2,0		·
						(3a)			<u> </u>	

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

1	d atop np. 40°C (104°F) 2	Rotational-speed 2b limitation intermediate speed	high idle s	peed (50)	idle switchin	ng point	travel	Control rod travel
rev/min	cm³/100\) strokes	rev/min 🕶	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	8	7	8	9+0.2
1250	102, 5- 103, 5 (100, 5-105, 5)	1290-1300 *	800 500	96,0- 99,0 (94,0- 101,0) min. 94,0	250	134,25 - 144,25 7 mm RW	1250 1035 - 810 500	11,5 11,5 11,8 11,9

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 3,8 n 3 2. Edition

PES 4 A 90 D 410 RS 2570

ROV 300-1400 AB 1111 - 1 L

supersedes 11.80

company:

Daimler-Benz

OM 314

engine:

62,5 kW(85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings
(2,20-2,40)
Port closing at prestroke
2,25-2,35
mm

RW 10,5

1 - 3 - 4 - 2

0 -90 -180-270

, or coogning arpro-		2.25-2.35				
Rotational speed	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1	2	3	4	2	3	6
1400	10,2	6,2 - 6,3	0,3(0,45)			
	+0,1					
300 400	8,2-8,4 Se	0.9 - 1.5 ct. C, col. 4,	0,2(0,4) 0,4(0,55)			
	}					

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	ed	Lower rated	speed	1	Sliding sleeve travel	
Degree of deflection of control	rev/min Control rod travel	Centrol rod travel	(19)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm	rav/min	(2a)	lever	rev/min	mm 4	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	1400	15,2-17,	.8				ca.20	100	min.9,8	300	1,1
	1700	0 - 1	1					300	8,2-8,4	650	3,8-4,0
								-		1450	8,0
ca.62	9,2	1440-145	50					570-6	530 = 2,0		
	4,0	1535-156							•		
<u> </u>						İ	(3a)				

Torque control travel a =

1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 58	Starting Idle switchin	<u> </u>	Torque- travel	control 5
rev/min 1	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min 6	cm³/1000 strokes 7	rev/min travel	
1400	62,5-63,5 (60,5-65,5)	1440-1450*	400	46,5-50,5 (44,5-52,5)	100	72,25-82,25 14,8-15,2 mm RW	1400 1000 600 400	10,2 10,6 10,8 11,2
						-220(80-240)		

Checking values in brackets

WPP 001/4 MB 3,8 n 4

2. Edition

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1124 L

supersedes company:

11.80

Daimler-Benz

engine.

OM 314

62,5 kW(85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,2 - 6,3	0,3(0,45)			
300 400	+0,1 8,2-8,4 - Sec	0,9 - 1,5 t. C, col. 4,5	0,2(0,4) 0,4(0,55)	i .		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	ed	Lower rated	speed	1	Stiding s	leeve travel
Degree of deflection	rev/min Control	Control rod (a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		
of control lever	rod travel	mm rev/min (2a)	of control lever	rev/min	mm 4	of control	rev/min	mm 3		mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1400	15,2-17,8				ca.20	100	min.9,8	300	1,1
ļ	1700	0 - 1					300	8,2-8,4	650 1450	3,8-4,0 8,0
							570-6	30 = 2,0		
ca.62	9,2	1440-1450								
	4,0	1535-1565				(3a)			<u> </u>	<u></u>

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

1	d stop np. 40°C (104°F) 2	timitation intermediate speed	Fuel deliv high idle s rev/min	rery characteristics 58 peed 55 cm³/1000 strokes	Starting Idle switchin	•	Torque- travel	Control 5 Control rod travel
rev/min 1	cm ³ /1000 strokes	rev/min 3	4	5	6	7	8	9
1400	62,5-63,5 (60,5-65,5)	1440~1450*	400	46,5-50,5 (44,5-52,5)	100	72,25-82,25 14,8 - 15,2 mm RW 220(80-240)	1400 1000 600 400	10,6 10,8

Checking values in brackets

MAN 12,8 b WPP 001/4 2. Edition

PE 8 A 95 D 320 LS 2421

ROV 250-1250 AB967R

supersedes8.77 company: M A N

D 2538 MTE

8 - 7 - 2 - 6 - 3 - 5 - 4 - 10 -45 -90 -135-180-225-270-315° $\stackrel{+}{=}$ 0,50 (0,75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Cv1. 8

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,4	10, 1 - 10, 3	0,3(0,6)			
	(+0,1)					
250	6,4-6,6	1,5 - 2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in [

Testoil-ISO 4113

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding	Heeve travel
deflection	rev/min Control	Control rod ta	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1 ①
	rod travel mm	mm rev/min 2a	of control lever	rev/min	mm (4)	of control	rev/min	rim (3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.50	1275 1450	14,4-17,4 0 - 1	-	-	-	ca.13		min.7,5 5,9-6,1 370 = 2,	600	0,5-1,2 4,0-4,4 8,3
ca.43	9,5 4,0	1290-1300 1340-1370				(39)	500	3 - 1	-	-

Torque control travel a #

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 50 peed 50	Starting Idle switchin		Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 49	rev/min	cm ³ /1000 atrokes	rev/min	cm ² /1000 strokes	rev/min 8	travel mm
1250	99,5 - 101,5 (97,5 - 103,5	1290 - 1300			100 250	15,7-16,3 mm RW 15 - 21		

Checking values in brackets

* 1 mm less control rad travel than col. 2

WPP 001/4 MB 3,8 n 2

1. Edition

PES4A90D410RS2570

ROV300-1400AB1065DL

supersedes

company:

Daimler-Benz OM 314

engine:

62,5 kW(85PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Banches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)

Port closing at pres	12	.20-2.40)	11111 (110111 000)			
Rotational speed rev/min	Control rod travel mm 2	Fuol delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1400	10,5-10,6	5,9 - 6,0	0,3(0,45)			
300	5,9-6,1	1,1 - 1,7	0,2(0,4)			
	/					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed	1	Intermediate	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 2	of control	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min 10	mm 11
	 -	3		 	-	 	0	3		
ca.62	400	15,2-17,8	-	-	-	ca.11	100	min.7,5		
	700	0 - 1		ļ			300	5,9-6,1		
ca.60	9,5	1440-1450					 380 - 4	50		
	4,0	1550-1580				3 a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		limitation intermediate speed	high idle s	rery characteristics (5e)	Starting Idle switchir		Torque (ravei	Control rod
rev/min	cm³/1000 strokes	rev/min 44	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1490	59,0-60,0 (57,0-62,0)	1440-1450*	1000	58,0-60,0 (56,0-62,0)	100	72,25-82,25		10 , 5-10,6 10,6-10,7
			600	51,0-53,0 (49,0-55,0)	100-	220(80-240)	600	10,7-10,8

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5.7 w 1

1. Edition

PES 6 A 90 D 410 RS 2565

RQV 300-1400 AB 884L

supersedes

company.

Daimler-Benz

engine:

OM 352

1 - 5 - 3 - 6 - 2 - 4 0 -60 -120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

RW 10.5

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,1	6,1 - 6,2	0,3(0,45)			
300 600	+0,1 6,0-6,2 	0,8 - 1,4 C, col.4-5	0,2(0,4) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod (travel mm rev/min (2	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3 9	rev/min	mm
ca.68	1400 1750	15,2-17,8 0 - 1,0				ca.13	100 300 610-6	min.8,0 6,0-6,2 570 = 2,0	1	
ca.56	10,1 3,4	1440-1450 1575-1605				330-40 3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten	Blivary 1 stop np. 40°C (104°F) 2	Rotational-speed 2b timitation intermediate speed		very characteristics (58)	Starting idle switching	,)	Torque- travál	Control rod
rev/min	cm ³ /100G strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	∉ev/min	cm³/1000 strokes	nim\ve1	travel mm
1	2	3	4	5	6	7	8	9
1400	61,0-62,0 (59,0-64,0)	1440-1450*	600	52,0-54,0 (50,0-56,0)	100 100-	13-13,4 mm RW 72,25-82,25 220(80-240)		

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 3,8 n 2

2. Edition

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1065-1 DL

supersedes

2.80

1 - 3 - 4 - 2

company:

Daimler-Benz

OM 314

engine:

62,5 kW(85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

0 -90-180-270

RW 10,5

Port closing at pres	troke (2,20-2,40)	mm (from BDC)		, ·	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	cm ³ /		Spring pre-tensioning (torque-control valve) mm 6
1400	10,2	6,2 - 6,3	0,3(0,45)			
	+0,1					
300	8,2-8,4	0,9 - 1,5	0,2(0,4)			
400	-	C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed	•		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection			וש	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rod travel mm	rev/min		of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	1400	15,2-17,	8	-	-	-	ca.20	100	min.9,8	300	1,1
	1700	0 - 1	1					300	8,2-8,4	650	3,8-4,0
ca.62	9,2	1440-145	0					570-6	530 =2,0	1450	8,0
	4,0	1535-156	5				3 a				_ , ,

Torque control travel a =

1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a	Starting Idle switching		Torque- travel	Control (5)	
rev/min cm³/1000 strokes		rev/min 48	rev/min	cm ³ /1000 strokes	rev/min cm³/1000 strokes		rev/min	travel mm	
1	2	3	4	5	6	7	8	9+0,2	
1400	62,5-63,5 (60,5-65,5)	1440-1450*	400	46,5-50,5 (44,5-52,5)	100	72,25-82,25	1400 400 600 1000	10,2 11,2 10,8 10,5	
					100-	1 220(80-240)			

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 3,8 n 3

1. Edition

PES4A90D410RS2570

ROV 300-1400 AB 1111-1L

supersedes

company:

Daimler-Benz OM 314

engine:

62,5 kW(85 PS)

1 - 3 - 4 - 20 -90 -180-270

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

2,25-2,35

mm (from BDC)

RW 10,5

		2,20 2,00				
Rotational speed Control rod travel rev/min mm 2		Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1	2	3	14	2	3	6
1400	10,2	6,4 - 6,5	0,3(0,45			
300 400 1200	+0,1 7,9-8,1	0,9 - 1,5 C, col.4-5	0,2(0,4) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Interm	ediate rated	speed		Lower rated	speed		Sliding sleeve travel	
	rev/min Control	Control rod (1 travel	Degree		Contro travel	rod	Degree of deflection		Control rod travel		①
l .	rod travel mm	mm rev/min (2	of con	rev/m	in mm	4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6		7	8	9	10	11
ca.68	1400 1700	15,2-17,8 0 - 1	3				ca.20	100 300 675	min.9,4 7,9-8,1 1,0	300 650 1450	1,1 3,8-4,0 8,0
ca.62		1440-1450 1535-156					550-670	070	- 605=2,0		
							(3a)				

Torque control travel a =

1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 2b limitation intermediate speed	high idle speed		Starting Idle switchir	fuel delivery 6	Torque- travel	Control rod
rev/min cm³/1000 strokes rev/min		rev/min 40	rev/min	rev/min cm³/1000 strokes		cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	?	8	9+0.2
1400	64,0-65,0 (62,0-67,0)	1440-1450*	1200	61,5-64,5 (59,5-66,5)	100	72,25-82,25	1400 1005	10,2 10,4
			400	49,5-52,5 (47,5-54,5)			615 400	11,0 11,3
					100-	220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.80

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WPP 001/4 MB 3,8 n 4 1. Edition

PES 4 A 90 D 410 RS 2570

RQV 300-1400 AB 1124 L

supersedes

Daimler Benz company:

OM 314 engine:

62,5 kW(85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Festoil-ISO 4113

Port closing at pres	stroke	2.25-2.35 mm (from BDC) RW 10,5								
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)				
rev/min 1	mm 2	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm 6				
1400	10,2	6,4-6,5	0,3(0,45)							
300 400 1200	+0,1 7,9-8,1 - -	0,9-1,5 C, col.4-5	0,2(0,4) 0,4(0,55) 0,4(0,55)							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed	<u> </u>		Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	mm .	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm
ca.68	1400 1700	15,2-17,8 0 - 1	3				ca.20	100 300 675	min.9,4 7,9-8,1 1,0	300 650 1450	1,1 3,8-4,0 8,0
ca.62		1440-1450 1535-1569					550-670 ③a		05 = 2,0		0,0

Torque control travel a = 1,1

C. Settings for Fuel Injection Pump with Fitted Governor

Fuil-load d Control-ro Test oil ten		limitation intermediate speed	high idle speed (5b)		Starting idle switching		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1900 strokes	rev/min	travel mm
'	<u> </u>	3	 	3	0	<u>'</u>	8	9 +0,2
1400	64,0-65,0 (62,0-67,0)	1440-1450*	1200	61,5-64,5 (59,5-66,6)	100	72,25-82,25	1400 1005	10,4
			400	49,5-52,5 (47,5-54,5)			615 400	11,0 11,3
						220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① WPP 001/4 MAN 7,2 d 1 and Governors

PES 6 A 85 D 410 RS2139

ROV 250-1250 AB851 DL

zebessequa

Edition

companM A N

engine: D 0846 HMX

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke /1	.45-1.65)	mm (from BDC)		
Rotational speed	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod trævei mm 2	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
1000	9	4,1 - 4,5	0,4		3	6
	6	0,6 - 1,4	1			1
200	-9	1,4 - 2,2				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated a			Intermediat	e rated sp	eed		Lower rated	speed	•	Sliding s	leeve travel
deflection	rev/min Control	Control rod (1	/ Genection	Ì	Control travel	rod	Degree of deflection	İ	Control rod travel		. ①
of control lever	rod travel mm	rev/min (2	of control lever	rev/min	mm	•	of control lever	rev/min	mm ③	rev/min	1
-	2	3		19	6		/	8	9	10	11
ca. 68	1320 1400 1500 1600	0 - 7		-		-	ca. 10	100 250 450 700	7,0-8,0 5,5-6,8 2,4-4,0 0	300 900 1320	1,8-2,4 4,8-5,2 8,3
							3a			1250 600	0 0,7-0,8

Torque control travel a = 0.7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		limitation intermediate speed	high idle s	very characteristics (5a)	Starting idle switchli	•)	Torque-control (travel	
rev/min	cm ³ /1000 strokes .	rev/min 4a	rev/min	rev/min cm³/1000 strokes rev/min cm³/1000 strokes		rev/min	travel mm	
1	2	3	4	5	6	7	8	9
1250	69,5 - 71,5	1260-1275 *	800 500		100	18,0-18,5		
				max. 07,5	250	7,0		_
					130-	-200/min		্

Chucking values in brackets

* 1 mm less control rod travel then col. 2

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WPP 001/4 MAN 9,2 e 1

1. Edition

PFS 5 A 95 D 410 LS2488

ROV 250-1100 AB956L

company: M A N engine: D 2565 ME

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,6	11,8 - 12,0	0,3(0,6)			
	(+0,1)		1			
250	5,6-5,8	1,4 - 1,9	0,3(0,5)			
500		C, 4-5 -	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in [

Testoil-ISO 4113

B. Governor Settings

Upper rated s	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	ieeve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Dagree of deflection of control		Control rod travel		0
lever	mm	rev/min (2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.50	1125 1400	14,4-17,6 01_	-	-	-	ca.10	100 250 310-	min.7,2 5,6-5,8 370=2,0		0,5 - 1,2 4,1 - 4,5 8,3
ca.43	9,6 4,0	1140-1150 1170-1200				3a	450	0-1		-

Torque controi travei a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	high idle s	very characteristics 5a	Starting idle awitchli		Torque- travel	control (5)
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
1	2	3	4	5	8	7	8	9
1100	116,5-118,5 (114,5-120,5)	1140-1150*	500	107,5-111,5 (105,5-113,5)	250	15,7-16,3 mm RW 15 - 20 170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 STE 6,0 i

1. Edition

En

PE 6 A 90 D 412 RS 2507 RQV 300-1400 AB 970 DL

supersedes

company: Steyr

engine:

WD 610.00

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25

mm (from BDC)

Rotational speed rev/min		Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	8,5	5,5 - 5,7	0,3(0,45)			
300 900/500	(+0,1) 7,4-7,5 Sect. C,	1	0,2(0,4) 0,4(0,55)	ì		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
deflection	rev/min Control rod travel mm	Control rod travel mm rev/min	(a) (2a)	Degree of deflection of control lever	rav/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm (1)
1	-	3		4	5	6		8	9	10	11
	1475 1750	15,2-17 0 -	1				ca.13°		min.9,0 5,9-6,1	1475	8,2
ca.39°	1445 1500	ca. 7,5 ca. 4,0					(3a)	450-	510= 2,0	1400 1100 900 500	8,5-8,6 8,7-9,0 9,2-9,4 9,7-9,8

Torque control travel a = 1,2 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed	high idle speed (5)		Starting fuel delivery Idle switching point		Torque- travel	control 5 Control rod
rev/min	cm³/1000 strokes .	revimin 49	rev/min	cm ³ /1000 strokes	rev/min 6	cm ³ /1000 strokes	rev/min 8	travel mm
1400	55,5-56,5 (53,5-58,5)	1440-1450*	900 500	52,0-55,0 (50,0-57,0) 44,5-46,5 (42,5-48,5)	100	111,25- 117,25		

Checking values in brackets

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 5,7 n 2 2. Edition

<u>En</u>

PES 6 A 90 D 410 RS2293 RQV 300-1425 AB960 (1) RS2293Z RQV 300-1425 AB960 (2)

supersedes 3.76
company: Daimler-Benz
OM 352
engine: (130 PS - 1)
OM 352 A
(168 PS - 2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,15-2,25 mm (from BDC)

Rotational speed rev/min 1		Fuel delivery (1) cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery (2) cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,6	6,1 - 6,3	0,3(0,45)	10,8	7,5 - 7,7	
300	(+0,1) 6,0 (±0,1)	1,4 - 2,4	0,2(0,4)	(+0,1) 6,0 (±0,1)	1,4 - 2,4	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermedia	e rated sp	eed	Lower rated	speed		Slidina s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	mm	Degree of deflection of control lever	rev/min 5	Control rod travel	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	mm 11
ca.66		1,4-8,) 1	-	-	ca.10	100 300 450 600 760	6,6-7,8 4,9-6,4 3,0-4,2 1,3-2,8	1425	1,4-2,2 8,1 -
						3				

Torque control travel a =

MП

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load de Control-rod	stop	limitation	Fuel deliv	very characteristics (5a)	Starting didle switching		travel		
	rev/min cm³/1000 strokes		rev/min	rev/min	cm ³ /1000 strokes	rev/min cm³/1000 strokes		rev/min	Control rod travel mm	
٠	1	2	3	4	5	6	7	8	9	
(1)	1400	61,5-62,5 (59,5-64,5)	1455-1465* (1450-1470)			100	13,7-14,3 mm RW	·		
(2)	"Z" 1400	74,0-75,0 (72,0-77,0)	1435-1445* (1430-1450)			-				
		(, 2, 0 , 7, 30)				100	220 min-1			

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.77

BOSCH

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Test Specifications Fuel Injection Pumps 1 WPP 001/4 MAN 11,1 m and Governors

Edition

PES 6 A 95 D 410 LS 2489

RQV 250-1100 AB 850 DL

company.MAN

engine: D 2566 MUH

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,7	12,4 - 12,7	0,3(0,6)			
	(+0,1)					·
250	5,9-6,1	1,1 - 1,7	0,3(0,5)			
500	C, col	4-5	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed			Sliding sleeve travel	
		Control rod travel	(18)	Degree of deflection		Control rod	Degree of deflection		Control rod travel		1	1
	rod travel mm 2	mm rev/min 3	2a			mm 4	of control lever 7	rev/min 8	8 ww (~1	rev/min 10	mm 11+0,1
ca.50 ⁰	1140 1300	14,4-17, 0 - 1	6				ca.13 ⁰	100 250	mind.7			11,7 11,8
ca. 42 ⁰	1145 1190	ca. 10,7 ca. 4,0					Ì	310 - 450	272			11,9
							3a					

Torque control travel a = 0,5

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod atop Test oil temp. 40°C (104°F) (2)		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	rery characteristics 50 peed 50	Starting Idle switching	<u> </u>	Torque- travel	control 5
rav/min 1	cm³/1000 strokes .	rev/min 49	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ² /1630-strokes 7 mm RW	rev/min 8	travel mm 9
1100	123, 0-125, 0 (121, 0-127, 0)	1140-1150 *	500	113,5-118,5 (111,5-120,5)	100	12,6-13,0		
					250	6,0		

Checking values in brackets

* 1 mm less control rod travel then cal. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MAN 16.0 e

1. Edition

PE 10 A 90 D 520/5 LS2515

ROV 250-1150 AB852DR

supersedes

MAN

company: engine:

D 2530 MSF

10 - 9 - 4 - 1 - 8 -7 - 6 - 3 - 5 - 2 0 -45 -72 -117-144-189-216-261-288-333
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,50-1,60 nm (from BDC)

Cv1. 10

Port Growing at pres	uoke /	1 45-1 65\	IIIII (IIUIII BUC)		0) 1. 10	
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	11,0	9,5 - 9,7	0,3(0,45)			
250 500	7,4-7,6	0,9 - 1,5 C, 4-5 -	0,2(0,4) 0,4(0,55)	1		

Adjust the fuel delivery from each outlet according to the values in [

Testoil-ISO 4113

B. Governor Settings

Upper rated s	peed		Intermediate rated speed Lower rated speed				Sliding sleeve travel			
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod traval		1
	UW.	rev/min (2a)	lever	rev/min	mm 4	lever	rev/min	mm 3	i .	mm
1	2	3	4	5	6	7	8	9	10	11
ca. 50	1175 1350	14,4-18,4 0 - 1	-	-	-	ca. 13	250	min.7,2 5,6-5,8 370 = 2,0		0,6-1,2 4,0-4,4 0 8,3
ca. 44	10,0 4,0	1190-1200 1230-1260				(3a)	450	0 - 1	-	-

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b timitation intermediate speed				Starting fuel delivery 6 Idle switching point				Control rod
rev/min	cm³/1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ⁸ /	1000 str	okes	rev/min	travel mm
1	2	3	4	5	6	7	mm	RW	8	9
1150	95, 5-96, 5 (93, 5-98, 5)	1190-1200*	500	85,0-89,0 (83,0-91,0)	100 250	17	,7-1	•		
				·	100-	 -170	(80	-190)		

Checking values in brackets

* 1 mm less control rod travel then col. 2

K16

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MAN 11,1 p 6 and Governors

1. Edition

PES 6A 95 D 410 LS 2542 RQV 250-1100 AB 1068 DL

supersedes

company: MAN

engine:

(177,0 kW-241 PS) D 2566 ME/MF

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
1,50-1,60
Port closing at prestroke (1,45-1,65)

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,0-12,1	12,6 - 12,8	0,3 (0,6)			
250	5,9-6,1	0,9 - 1,5	0,3 (0,5)			4
750/500	:	C, 4-5	0,4 (0,7	þ		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Slidina s	leeve travel
Degree of deflection	rev/min Control	Control rod (1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rod travel	rev/min (28)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.50	1100	15,2-17,8				ca.12	100	min.7,5	250	1,1
	1300	0,0-1,0					250	5,9-6,1	565	3,65-4,05
ca.44	11,0	1140-1150]				325 -	385 =2,0	1150	8,1
Ų	4,0	1180-1210			İ				ব	
						3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed (25) timitation intermediate speed	Fuel delin	very characteristics (5a)	Idle	fuel delivery 6	Torque- travel	control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 4e	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	8	7	8	8
1100	124, 5-126, 5 (122, 5-128, 5)		500 750	max. 113,5 (max. 115,5) 110,5-113,5 (108,5-115,5)		124,0-134,0 6,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col. 2

②

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 HAN 2,8 a 8
3. Edition

Er

PE 4 A 60 C 310 LS 1088, Z RQ 300/1500 AA 466 D .. AB 571 D

supersedes

10.64

company:

Hanomag

engine:

D 28 CKL

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

net (from BDC)

Rotational speed rov/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference Control rod travel cm³/ 100 strokes mm 4		Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	4.5 - 5.0	0,3	12	3.7 - 4.1	
	6	0,5 - 1,2		9	1,7 - 2,5	
200	6	0,3 - 0,9		9	1,0 - 1,8	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slic PRG check Contro travel rev/min 1 2	(1)		•	•	rev/min	rev/min	Control rod travel	Test spe	cifications 5 Control rod travel mm	Torque of rev/min	Control rod travel
1450 13,	6-14,5	1450	14,1	1520 1540 1560 1640	10,0-14,1 5,6-12,4 0 - 10 0	540		150 300 400 440	7,0-8,1 3,5-5,9 0 -2,3 0	İ	15,7-16,0 14,2-14,6

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop (3a)	Fuel deliv	ery characteristics 3b	Starting f	uel delivery of Contra
rey/min	cm ³ /-1000 strokes 2	rey/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes;/ mm 7
1500 "Z"	43,2 - 45,2	750	1150 800 500	43,2 - 45,8 45,7 - 48,3 45,7 - 48,3	100	18 - 21
1500	40,0 - 42,0	750	1200 800 500	37,5 - 40,5 41,0 - 44,0 41,0 - 44,0		

Checking values in brackets

. 10.77

BOSCH

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WPP 001/4 MB 5,7 v 4

1. Edition

PES 6 A 90 D 410 RS 2569

1 - 5 - 3 - 6 - 2 - 4

0 -60 -120-180-240-300

ROV 300-1450 AB 1114 L

supersedes

Daimler-Benz company:

engine:

OM 352

81 kW (110 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (2,20-2,40)
Port closing at prestroke 2,25-2,35 mm

mm (from BDC) RW 10,5

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1450	9,2-9,3	4,4-4,5	0,3(0,45)			
300 500	8,4-8,6 	0,9-1,5 C, col.4-5	0,2(0,4) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control	Control rod (18	/ denection	rated sp	eed Controî rod travel	Lower rated Degree of deflection	speed	Control rod travel	Sliding s	leeve travel
of control lever	rod travel	rev/min (2)	of control lever	rev/min		of control lever	rev/min	mm ③	rev/min	mm 11
 	2	3	 	5	6	<u> </u>	8	3	10	
ca.68		15,2-17,8				ca.22	100	min.10,0	30,0	1,1
	1700	0 - 1,0					300	8,4-8,6	650	3,8-4,0
ca.63	8,5	1490-1500	7				550-	510 =2,0	1500	
	4,0	1565-1595				3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 5a	Starting Idle switching	. 0	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strakes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1450	44,5-45,5 (42,5-47,5)	1490-1500*	500	38,0-41,0 (36,0-43,0)	160	72,25- 82,25	1450 1130 760 500	9,2 9,4 9,9 10,3
					100-220(80-240)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

WPP 001/4 MB 5.7 v 1 2. Edition

PES6A90D410RS2571

ROV300-1400AB884L

supersedes 2.80

company:

Daimler-Benz

engine

OM 352 A

1 - 5 - 3 - 6 - 2 - 4 $0 -60-120-180-240-300 \pm 0,50(0,75)$

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,00-2,10
Fact closing at prestroke
(1,05-2,15) mm

mm (from BDC)

Or Colonial at bios	(1	,95-2,15)	11111 (110111 000)			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve) mm
1400	12,2	6,8 - 6,9	0,3(0,45)		<i>(</i> ,,,,,,,, .	
300 600	+0,1 6,4-6,6 	0,8 - 1,4 C, col.4-5	0,2(0,4) 0,4(0,55)			
		-				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Stidings	leeve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	2000093	0
lever	mm	rev/min (2a	lever	rev/min	mm 4	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1400 1750	15,2-17,8 0 - 1		•	-	ca.11	100 300	min.8,0 6,4-6,6		
ca.54		1440-1450 1575-1605				<u>3</u>	580	max. 1,0 -640 =2,0 -440		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 5a	Starting idle switchir	.)	Torque- travel	Control rod
rev/min	cfh³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travəl mm
1	2	3	4	5	6	7	8	9
1400	68,0-69,0 (66,0-71,0)	1440-1450*	600	51,0-53,0 (49,0-55,0)	100	72,25-82,25		
					100-	220(80-240)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 STE 6.0h 4 1. Edition

PE 6 A 85 D 412 RS 2296

ROV 250-1400 AB 1098 L

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes

company: Steyr

WD 612.00 engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(2,45-2,65)
Port closing at prestroke
2,50-2,60 mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	8,8-8,9	6,4 - 6,5	0,3(0,45)			
250 1000 500	7,8-8,0 	C, col. 4-5	0,2(0,4) 0,4(0,55) 0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed		Lower rated speed				Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm (•	Degree of deflection of control lever 7	rev/min 8	Control root travel mm (3	rev/min 10	(1) mm 11
ca.68	1400 1650	15,2-17, 0 - 1,		-	-	-		ca.11		min.7,5 5,9 - 6 0 -	5,1	250 450 1450	0,9 2,5-2,7 8,4
ca.44		1440-145 1500-153						3a		,			

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		limitation intermediate speed	(39)		idie switchir	ng point	travel	Control cod
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	, mm 9
1400	64,5-65,5 (62,5-67,5)	1440-1450*	1000 500	63,5-65,5 (61,5-67,5) 53,5-54,5 (51,5-56,5)	100	99,5-109,5	500 1120	8,8-8,9 9,3-9,4 9,1-9,3 8,8-9,1

Checking values in brackets

* 1 mm less control rod travel than col. 2



Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 MAN 11,1 h 1

1. Edition

PES 6 A 95 D 410 LS2485

Rotational speed

1100

250

500

rev/min

RQV 250-1100 AB956L

supersedes

company M A N engine: D 2566 ME

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Control rod

11,7

+0,1

5.9-6.1

mm

1,50-1,60Port closing at prestroke (1,45-1,65) mm (from BDC)

Fuel delivery

cm³/100 strokes

12,4 - 12,7

0.8 - 1.4

	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
	100 strokes	mm 2	cm ³ /1 00 strokes 3	mm 6
7	0,3(0,6)			
	'			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	. <u></u>	Intermediate	rated sp	eed	Lower rated	speed	t	Sliding sleeve travel	
deflection	rev/min Control	Control rod (a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
	rod travel mm	mm rev/min (2a)	of control lever	rev/min	mm 4	of control lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.50	1120 1300	14,4-17,6 0 - 1	-	-	-	ca.10	100 250	min.7,2 5,6-5,8	800	
ca.48	10,7 4,0	1140-1150 1180-1210				<u> </u> 	310-3 450	70 = 2.0 0 - 1	1120	8,3
						<u>3</u>				

0,3(0,5)

0,4(0,7)

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-196 Test oil ten		Rotational-speed 20 limitation intermediate speed			Starting Idle switchir		Torque-control 5 travel Control roc	
rev/min 1	cm ³ /1000 strokes .	rev/min 49	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ² /1000 strokes 7 mm RW	rev/min 8	travel mm 9
1100	123, 0-125, 0 (121, 0-127, 0)		500	113,5-118,5 (111,5-120,5		12,6-13,0 6,0		
					100	-170 (80-190)		

Checking values in brackets

* 1 mm less control rod travel then col. 2



WPP 001/4 1. Edition

PES 6 A 95 D 420 LS 2595

RQ 200/1050 AB 1094

supersedes

company:

engine:

Raba-Ungarn D2156 HM6U

(141,0kW-192PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(1.95-2.05)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	10,6-10,7	10,3-10,5	0,3(0,6)			
200 800/500	6,9-7,1	1,1- 1,5 C, col.4-5	0,3(0,5) 0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load s Setting po	oint Control	Test spec	cifications (ldle spec Setting p	oint Control	Test spe	cifications 5	Torque o	Control rod
rev/min 1	travel mm 2	rev/min 3	rod travel mm 4	rod travel mm 5	rev/min 6		rev/min 7	red travel mm 8	rev/min 9	travel mm 10	rev/min	travel mm 12
500	19,2-20,8	500	20,0	9,6	1095-111	0	200	6,0	100	min.7,5	1050	10,6-10,7
1225	0 - 1,0	VB ca	. 49	4,0	1125-115	55			200	5,9-6,1	840	10,7-11,0
									350	max.1,0		11,1-11,3
									270-	310=2,0	500	11,3-11,4

Torque-control travel

0,28 _{mm}

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting fuel delivery Idle speed Contr		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes:/ mm	
1050	102,0-104,0 (100,0-106,0)		800	103,0-106,0 (101,0-108,0)	100	154,0-164,0	
			500	max. 91,5 (max. 91,5)	200 100-140	12,0-16,0 (80 - 160)	

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 WPP 001/4 MAN 7,2 k and Governors

Edition

PES 6 A 85 D 410 RS2139Y

ROV 250-1250 AB906DL

company: M A N

D 0836 HM7/HM74 engine:

(156 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
1,50-1,60
Port closing at prestroke (1.45-1.65) mm mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	10,0	7,0 - 7,2	0,3(0,45)			,
	(+0,1)					
250	6,8-7,0	0,8 - 1,4	0,2(0,4)			
800/500		C, 4-5 -	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	rev/min	Control rod	_	1 1 1				Lower rated	speed	Control rod	Sliding sleeve travel	
deflection	Control rod travel	travel		deflection of control	rev/min	travel	4	deflection of control lever	rev/min	travel	rev/min	mm (1)
1	2	3		4	5	6	<u> </u>	7	8	9	10	11
ca.50	1275 1450	14,4-17,4 0 - 1	4	•	-	•	•	ca.13	100 250		200 600	4,0-4,4
ca.43	9,0 4,0				i				315- 450	375 =2,0 0 - 1	1275 1250	8,3 +0,1 10,0
	7,0	1000 100						(3a)			1000 500	10,6

0.7 mm Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

elivery d stop np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed			idle		Torque-control 5 travel Control ro	
cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	_	OU		travel mm
71,0 - 72,0 (69,0 - 74,0)	1290-1300	800		100			1250
		500			7,0		
¢	d stop np. 40°C (104°F) 2 cm³/1000 strokes 2 71,0 - 72,0	d stop (104°F) 2	d stop (104°F) 2 (104°F) 2 (104°F) 2 (104°F) 2 (104°F) 3 (104°	cm ³ /1000 strokes rev/min 2 1290-1300 100	distop filmitation intermediate speed high idle speed filmitation intermediate speed filmitation intermediate speed filmitation filmitat	distop fimitation high idle speed fib fide speed fib switching point cm³/1000 strokes rev/min cm³/1000 strokes fib cm³/1000 strokes rev/min cm³/1000 strokes fib cm³/1000 strokes fib fide speed fib switching point cm³/1000 strokes fib fi	d stop limitation high idle speed solution high idle speed high idle speed solution high idle speed high idle speed solution high idle speed

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MB 8,7 c 1 1. Edition

PE 6 A 90 D 410 RS 2124 X RQ 375/1275 AB 658 DL supersedes

company:

Daimler-Benz

engine:

OM 360

125 kW(170 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1250	9.3-9.4	7.7 - 7.8	0,3(0,45)			
375 700	7,4-7,6 10,1+0,1		0,4(0,55)			·

Adjust the fust delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod	Full-load s Setting po rev/min 3	•	_	rev/min	Idle spec Setting p rev/min 7	Control rod travel		cifications 5 Control rod travel mm	Torque of rev/min	Control rod (3)
700	15,6-16,4	700	16,0		1295-1310 1345-1375	375	7,5	100 375 500 465-	7,4-7,6 max. 0	1250 1075 895 700	9,3-9,4 9,4-9,7 9,8-10,0 10,1-10,2

Torque-control travel on flyweight assembly dimension a = 0,4 _{mm}

Speed regulation: At 1295-1310 min

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting f	
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	- 1	rev/min 6	Control red travel cm ³ /1000 strokes:/ mm 7
1250	77,0-78,0 (75,0-80,0)	650	700	77,0-80,0 (75,0-82,0)		-	•

Checking values in brackets

4.81

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WPP 001/4 OMB 8,1 a

1. Edition

PES 6 A 90 D 410 RS 2494

RQ 275/1300 AB 1034 DL

supersedes

om-Brescia 8360.05.291

engine:

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,1 -2,3

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	12,4+0,1	7,05-7,15	0,3(0,45)			
275 700	8,3-8,5	0,4 - 0,9	0,2(0,4)			
500	13,4-0,1	C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod travel	Full-load s Setting po rev/min 3	-	-	cifications (4) rev/min 6	Idle spec Setting p rev/min 7	coint Control rod travel		cifications 5 Control rod travel mm	Torque o	Control rod
700	15,6-16,4	700	16,0		1345-1360 1450-1480 0 - 1,0	275		100 275 600 465-	min.7,5 5,9-6,1 max.1,0 505=2,0	810 710	12,4+0,1 12,6+0,3 13,3+0,1 13,4+0,2

Torque-control travel on flyweight assembly dimension a =

4 mm Speed regulation 1345-1360 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			.5.5 55555		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	Control red travel cm ³ /1000 strokes:/ mm	
1300	70,5-71,5 (68,5-73,5)	500	700	71,5-74,5 (69,5-76,5)		100	20,0 - 21,0 mm RW	
			500	65,5-68,5 (63,5-70,5)				

Checking values in brackets

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MAN 11.1 b 3

1. Edition

__E

PES 6 A 95 D 410 LS 2409

RQ 250/1150 AB 869 DL

supersedes =

company MAN

engine

D 2556 MXE 232 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

1,3+0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,4 - 8,0	0,4			
	6	3,2-4,2				
200	6	0,5-1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	•		cifications	Idle spec	_		cifications	Torque control		
rev/min	Control rod travel mm 2	rev/min	Control rod travel	rev/min 5	Control rod travel mm	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	Control rod travel mm 12	
600	15,7-16,3	600	16,0	1170 1200 1250 1320		ł	0	150 250 350 450	6,5-8,1 4,7-6,9 1,7-4,2 0		-	

Torque-control travel on flyweight assembly dimension a

mm

1190-1205 min -1 Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor control lever		Control rod stop	Fuel delive	ery characteristics	Starting fuel delivery		
Test oil temp. 40°C (104°F) rev/min cm³/-1000 strokes 1 2		rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min	cm³/1 0005 Prokes 7	
1150	121,5 - 123,5		500	max. 118,5	100 250	11 - 12 7 mm RW	

Checking values in brackets

3.81

BOSCH

L12

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 OMB 8,1 a 1

1. Edition

En

PES 6 A 90 D 410 RS 2494

RQ 275/1300 AB 969 DL

supersedes

company:

OM-Brescia 8360.05.200

engine:

118 kW (160PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.10-2.30)

mm (from BDC)

Rotational speed rev/min	Control rod travel • mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	13,2+0,1	8,0 - 8,1	0,3(0,45)			
275 700	8,3-8,5 13,6+0,2		0,2(0,4)			
500	14,0+0,1	C, col.4-5	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod travel	Full-load s Setting po rev/min 3	•	_	rev/min	idle spec Setting p rev/min 7	Control rod travel		cifications 5 Control rod travel mm	Torque of rev/min 11	Control rod
900	13,6-15,0	900	14,3		1345-1360 1440-1470 0 - 1,0	275		275 600	min.7,3 5,7-5,9 max.1,0 80=2,0mm	700	13,2+0,1 13,6+0,2 14,0+0,1

Torque-control travel on flyweight assembly dimension a =

mn

Speed regulation: At 1345-1360 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics	I laid speed		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	Contres rad travel cm ³ /1000 strokes:// mm 7	
1300	80,0 - 81,0 (78,0 - 83,0)	-	700 500	77,5 - 80,5 (75,5 - 82,5) 71,5 - 74,5 (69,5 - 76,5)	100	109,25-119,25	

Checking values in brackets

5.81

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